TECHNICAL MANUAL ENGLISH

AS-WT-VW

Weighing Indicator

V1.07
REV:Y1,March,2020

CONTENTS

1. PRECAUTIONS

WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, CLEANING, OR SERVICING. FAILURE TO DO SO COULD RESULT IN BODILY HARM OR DAMAGE THE UNIT.

CAUTION

- **Permit only qualified persons to service the instrument**
- **Before connecting or disconnecting any components, remove the power.**
- **Failure to observe these precautions bodily harm or damage to or destruction of the equipment.**

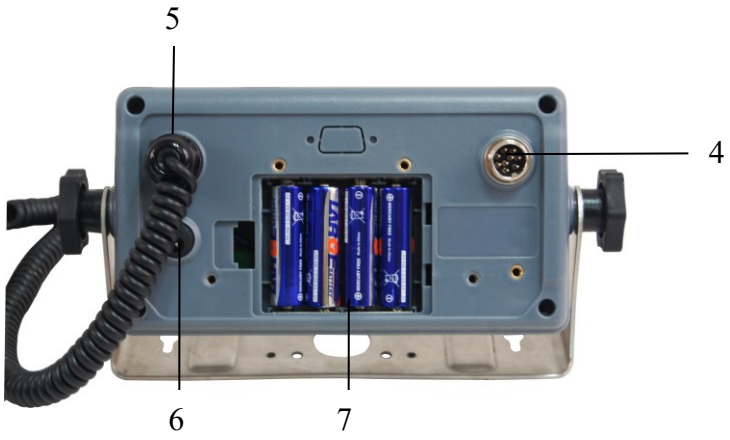
- The weighing indicator is a precision electronic instrument, handle it carefully.
- Do not install the scale in direct sunlight.
- Verify the local voltage and receptacle type are correct for the scale.
- Only use original adaptor, other could cause damage to the scale.
- Pluggable equipment must be installed near an easily accessible socket outlet.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Avoid sudden temperature changes, vibration, wind and water.
- Avoid heavy RF noise.
- Keep the indicator clean

2. PRODUCT DESCRIPTION

2.1 General

- The AS-WT-VW series weighing indicator that amplifies signals from a load cell, converts it to digital data and displays it as a mass value.
- It is suitable for general weighing or more specialized applications such as check weighing, parts counting, motion weighing and accumulation applications.
- It can connect the indicator to a printer or a PC.
- 22mm high digits LCD display with white LED backlight

2.2 Overall view



1. Weight display
2. Keyboard
3. Indicator wall bracket
4. Load cell connector
5. RS232 port
6. AC adapter jack
7. Dry Battery

3. INSTALLATION

3.1 Unpacking

When you receive the indicator, inspect it to make sure that it is not damaged and that all are parts are included:

- Remove the Indicator from the carton.
- Remove the protective covering. Store the packaging and to use if you need to transport the scale later.
- Inspect the indicator for damage.
- Make sure all components are included.
  1. Indicator
  2. Adaptor
  3. Manual
  4. Load cell Output connector
  5. Indicator wall bracket

3.2 Installation

- Place the Indicator on a table or use indicator holder to connect with stand.
- Connect the platform load cell cable in to the indicator load cell connector. Load cell connector is locating back side of the indicator.

3.3 Load cell connections

Connect the load cell cables to the terminal as shown below.

Pin	Connection
Pin 1	Signal +
Pin 2	Signal -
Pin 3	Shield
Pin 4	Exc -
Pin 5	Exc +

It can connect four 350ohm load cells.
The load cell drive voltage is 3.3V DC ±5% between Excitation + and Excitation -.

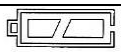
3.4 Power Connection

- Connect the adaptor pin in to the indicator adaptor jack.
  Adaptor jack is locating, back side of the indicator.

- Adaptor connects into your AC power socket. Pluggable equipment must be installed near an easily accessible socket outlet with a protective ground/ earth contact.

3.5 Dry battery operation

- The indicator can also be operated with 4x AA batteries.
- If the batteries are empty, display will appear the battery empty symbol. Change batteries. To save battery power, the indicator switches off automatically

	Capacity of batteries exhausted
	Batteries will soon be flat
	Batteries are completely charged

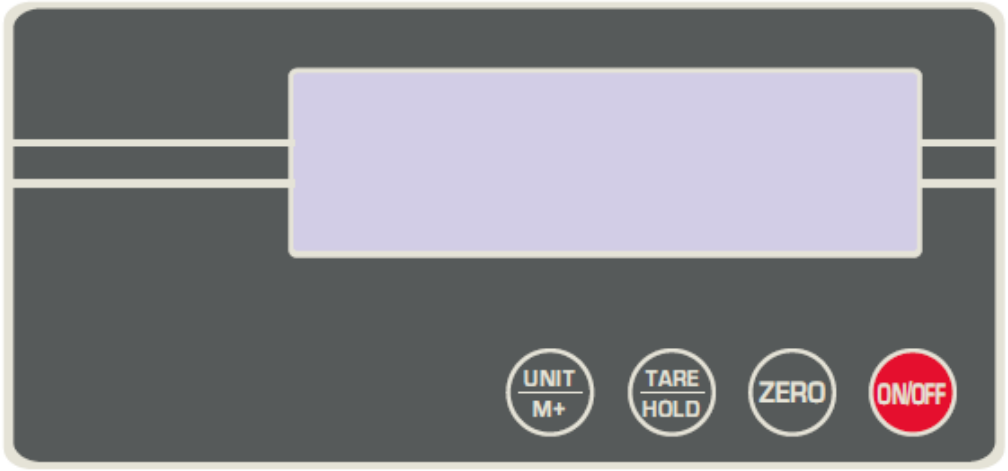
- If the indicator is not used for a longer time, take out the batteries and store them separately. Leaking battery liquid could damage the indicator.

3.5.1 Battery installation

1.Open battery compartment cover at the back side of the indicator.	
2.Insert batteries into battery compartment.	
3.Lock the battery cover again.	

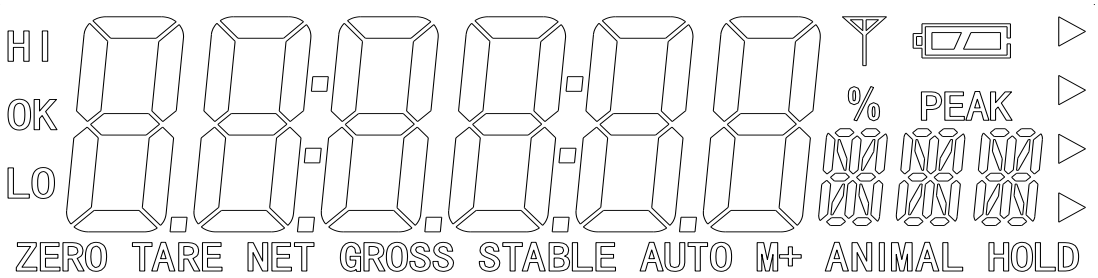
4. DISPLAY&KEYS FUNTION

4.1 Key Board



Keys	Description
ON/OFF	On/off key,Used to turn the scale on or off
ZERO	1) Zero key, used to clear and zero the display 2) Enter key, used to enter the selected menu, sub-menu and setting
TARE / HOLD	1) Tare key, used to perform a tare function, Subtracts weights 2) Lock key, press and hold the key to lock weighing value 3) Setup menu key, to enter the setup menu 4) To change the menu option in menu setting 5) Value increment key, used to change the selected digit value
UNIT / M+	1) Unit key, used to convert the weighing units 2) Accumulation key. Used to enter and show accumulated weights in memory 3) Memory recall key, show the stored values from the memory 4) Left arrow key, used to move the digit to the left 5) ESC key, used to exit the set-up menu. 6) Print key, used to send the data to printer or PC

4.2 Indication Description



DISPLAY	FUNCTION
HI OK LOW	Limits indicator. Indicates the high-low limits in weighing and counting.
ZERO	Zero indicator. Indicates the scale is at zero.
GROSS	Indicator for Gross weight
NET	Net indicator. Indicates scale is displaying the net weight.
STABLE	Stable indicator. Indicates the scale weight is stable.
M+	Accumulation indicator. Indicates the scale is in accumulation mode
HOLD	Hold Indicator. Indicates the weighing value is locked
	Battery indicator. Indicates battery is low and needs to be recharged.
ANIMAL	Motion weighing indicator. Indicates the scale is in motion weighing mode.

5. OPERATION

Initial Start-up

Warm-up time of 15 minutes stabilizes the measured values after switching on.

5.1 Switching on/off

- Switch on the indicator by pressing ON/OFF key.Display will be show the scale version and will be starting self-checking.
- After self-checking, display will be come to normal weighing mode.
- To switched off the scale, press ON/OFF key again.

5.2 Zeroing

Environmental conditions can lead to the balance exactly zero in spite of the platform not taking any strain. However, you can set the display of your balance to zero any time by pressing ZERO key and therefore ensure that the weighing starts at zero.

5.3 Using Tare

The weight of any container can be tared by pressing TARE HOLD button so that with subsequent weighing the net weight of the object being weighed is always displayed.

Taring a container

- Load weight on the platform.
- Press TARE HOLD key. Zero is displayed, and tare is subtracted. And NET indicator will be on.
- Remove weight on the platform. Tared weight is displayed. It can set only one tare value. It will be shown with a minus value.

Muti-tare

- Load weight on the platform.
- Press TARE HOLD key. Zero is displayed, and tare is subtracted. And NET lamb on.
- Load another weight on the platform.

- Press TARE HOLD key. Zero is displayed, and tare is subtracted. And NET &stable lamb on.
- Remove weight on the platform. Total tared weight is displayed. It will be shown with a minus value.

Clearing tare

- To clear the tare value, remove the load from the platform
- Press TARE HOLD key. Zero is displayed, the NET lamb off, tare weight is cleared.

5.4 Select Weighing Unit

Press the UNIT M+ key to change the weighing units (kg/g/lb/oz/lb.oz)

5.5 Check weighing &Check counting

It can set an upper or lower limit when weighing or counting with the limits range. During the limit controls dividing the unit will indicate whether a value upper or lower limits with an alarm sound.

- When the weight below the low limits, the display will be show LO
- When the weight between the limits, the display will be show OK
- When the weight exceeds the high limits, the display will be show HI

Note: Check weighing or counting available only when weight more than 20d

5.5.1 Set Check Weighing Mode

Press TARE HOLD key during self-checking. Display will appear **F1 CHK**.

Press ZERO key to enter display will be show **SET HI**.

Press TARE HOLD key until display show **BEEP.**

Press ZERO key to select BEEP mode.

BEEP Mode	Description
OK	1. Beeper sounded if the weight is within the limits, OK indicator on 2. Beeper off if the weight is below the lower limits, LO indicator on 3. Beeper off if the weight is exceeding the upper limits, HI indicator on
NG	1. Beeper off if the weight is within the limits, OK indicator on 2. Beeper on if the weight is below the lower limits, LO indicator on 3. Beeper on if the weight is exceeding the upper limits, HI indicator on
OFF	1. Beeper off if the weight is within the limits, OK indicator on 2. Beeper off if the weight is below the lower limits, LO indicator on 3. Beeper off if the weight is exceeding the upper limits, HI indicator on

Note: Check weighing available only when weight more than 20d

5.5.2 Limits setting for target weight

- Press TARE/HOLD key during self-checking. Display will appear **F1 CHK**.
- Press ZERO key to enter display will be show **SET HI**.
- Press ZERO key to enter, display will show 000.000kg
- Enter the upper limit value, using UNIT/M+ keys to move digits to left and using TARE/HOLD key to increment the value.
- Press ZERO key to confirm, display will back to setting menu
- Press TARE/HOLD key to select **SET LOW**
- Press ZERO key to enter, display will show 000.000kg
- Enter the lower limit value, using UNIT/M+ keys to move digits to left and using TARE/HOLD key to increment the value.

- Press ZERO key to confirm, display will back to setting menu,
- Press UNIT/M+ key twice to back to normal weighing mode

Note:To disable the check weighing function, enter zero into both limits.

5.6 Accumulation

The scale can be set to accumulate manually by pressing UNIT/M+ key.
Before operation scale should be stable and return to zero, accumulation available only when weight more than 20d

5.6.1 Accumulation Operation

- Place the load on the platform.
- Press and hold UNIT/M+ key, when STABLE indicator on.
- Display will be show ACC 01, and then the total saved value appears. These displays will be shown only two seconds.
- Remove the weight from the pan.
- When display get zero and stable then place the second weight.
- It can continue until the memory gets fully or 99 items.

5.6.2 Memory Recall

- To recall the memory press and hold UNIT/M+ key in zero point.
- Display will show the total saved value. These displays will be shown only two seconds.

5.6.3 Memory Clear

- Press and hold UNIT/M+ key in zero point, display will be show the total saved value
- Press ZERO key, all accumulation value will be cleared from the memory and back to normal weighing mode.

5.7 Hold

- In the normal weighing mode, load the weight on the platform, when stable indicator on, press TARE HOLD key, remove the weight, the reading value will be locked and HOLD indicator will be on.
- Press and hold TARE HOLD key again to unlocked and back to normal weighing mode

5.8 Backlight Setting

- Press TARE HOLD key during self-checking. Display will be show **F1 CHK**
- Press TARE HOLD key until display show **F6 BK**
- Press ZERO key to enter, the display will be show **BK AU**
- Press TARE HOLD key to select **(BK AUTO/BK OFF/bk on)**, After select the back light option press ZERO key to confirm and come to the weighing mode

Display	Description
Bk AUto	Backlight will be turned on, when start to use or when weight is not in zero.
Bk oFf	Backlight function will be turned off
Bk on	Backlight function will be turned on

Note: If the battery gets low, the backlight function will not be available

5.9 Auto Power Off Setting

- Press TARE HOLD key during self-checking, display will be show **F1 CHK,**
- Press TARE HOLD key until display show **F7 OFF**,
- Press TARE HOLD key to change auto power off time: 0/5/10/20/30.
  (of 0: always on, of xx: auto power off after standby xx minutes)

- Press ZERO key to sure, press UNIT/M+ key to escape from the menu, and back to normal weighing mode.

5.10 Motion Weighing

It can use for vibrate loads weigh. This function can use for animal weighing.
For settings, select the parameter **F10 ANM » ON**, to enter motion weighing mode animal indicator will be displayed

- Press TARE/HOLD key during self-checking. Display will be show **F1 CHK.**
- Press TARE/HOLD key until display show **F10 ANM.**
- Press ZERO key to enter, the display will be show **OFF.**
- Press TARE/HOLD key to select the option **ON.**
- Press ZERO key to confirm.
- Press UNIT/M+ key to back to normal weighing mode
- Make sure platter empty, and scale return to zero
- Bring the load on the platform
- when the load few seconds get stable, the reading will be locked for few seconds
- It can add or remove loads also update the weighing locked values.

To disable the motion weighing function, enter parameter to select **F10 ANM » Off,** scale will be back to normal weighing mode, and animal indicator off

6. PARAMETERS

KEYS OPERATIONS INTO THE MENU

Enter the menu

- During self-checking, press TARE/HOLD key.

Select the menu

- Press TARE/HOLD key, it can change the menu block one by one.
- Using increase the digit.

Enter the selected menu

- Press ZERO key, it can confirm, which will be shown displayed.

Return to weighing mode

- Press UNIT/M+ key, exit from the menu.

PARAMETER BLOCK

Menu	Description			Default
F1 chk	**SET HI**		Set high limits	0000
	SET LOW		Set low limits	0000
	BEEP		Select beep mode， Options: OFF (turn off the function), OK (beep sound will be active when it's in OK range), NG (beep sound will be active when it's in out of the range)	OFF
F2 com	**mode**	**prt**	Send data to PC or printer one time when press and hold **UNIT/M+** key	CONT
		off	RS232 function disable	
		cont	Send data continuous	

F2 com	**baud**	**1200**	To set baud rate	9600
		2400		
		4800		
		9600		
		115200		
	verity	**8N1**	To set the parity	8N1
		7e1		
		7o1		
F3 cal	**desc**	**0**	To set to use decimal point	
		0.0		
		0.00		
		0.000		
	dual	**on**	Dual interval mode In this mode, need to set division1 and division 2, capacity 1 and capacity 2	
		off	Single interval mode	
	div	**1**	To set division	
		2		
		5		
		10		
		20		
		50		
	cap		To set capacity	
	cal	**kg**	Calibration in kg mode	
		lb	Calibration in lb mode	
	L-cal	**kg**	Linear Calibration in kg mode	
		lb	Linear Calibration in lb mode	
F4inp	To show the Internal counts			
F5 ref	**0 auto**	**2**	Initial Zero setting range. When the display is turn on the scale is set to zero	20
		5		
		10		
		20		
		50		
	0 range	**2**	Manually zero setting range, by pressing ZERO key	5
		5		
		10		
		20		
		50		

F5 ref	**Azn 0**	**0.5d**	Auto zero range settings	2d
		1d		
		2d		
		4d		
F6 bk	**Off**		To set backlight	AUTO
	auto			
	on			
F7 off	**5 min**		Set power automatic turn off the scale	0
	10 min			
	20 min			
	30 min			
	0			
F8 gra	**xxxx**		Set the local gravity value	
F9 unt	**kg**		To set “kg” unit options on/off.	ON
	g		To set “g” unit options on/off. (lb or kg must be set to .000 to be able to turn on grams) once selected to the main weight, screen change unit to g then enter back into F9 UNIT and you can turn off kg or lb if needed	
	lb		To set “lb” unit options on/off.	
	oz		To set “oz” unit options on/off.	
	lz		To set “lz” unit options on/off.	
F10 anm	**on**		Animal function	OFF
	off			

Com settings

PS: For getting data, minimum weight should be 20d when in* prt *mode

7. CALIBRATION

7.1 Linear Calibration

1.Press TARE/HOLD key during self-checking the display will show

```
F1 chk
```

2.Press TARE/HOLD key to select until the display shows

```
F3 cal
```

3.Enter the function by pressing "**ZERO**" key, display will show

```
desc
```

4.Press TARE/HOLD key to select until the display shows

```
L-cal
```

5.Press ZERO key to confirm, the display will show

```
Kg
```

a. If calibrating in **kg**, continue step 6

b. If calibrating in **lb**, press TARE/HOLD key, **lb** will be show on the display

6.Enter the function by pressing ZERO key, display will be show

```
load 0
```

Make sure there are no loads on the platform

7. Press ZERO key to confirm when display gets stable, display shows

```
load 1
```

8.Place test weight 1 on the platform

9. Press ZERO key to confirm when display gets stable, display shows

```
load 2
```

10. Place test weight 2 on the platform

11. Press ZERO key to confirm when display gets stable, display shows

```
load 3
```

12. Place test weight 3 (full scale capacity) on the platform

13. Press ZERO key to confirm when display gets stable, display shows

```
load 2
```

14. After stable and zero indicator on, Remove the third calibration mass weight from the platform

15. Press ZERO key to confirm when display gets stable, display shows

```
load 1
```

16. After stable and zero indicator on, Remove the second calibration mass weight from the platform

17. Press ZERO key to confirm when display gets stable, display shows `load 0`

18. After stable and zero indicator on, Remove the last calibration mass weight from the platform

press ZERO key, display will be shown `pass`

Display will be self-test and come to the normal weighing mode.

If display will be shown any error or incorrect value, repeat the procedure again.

7.2 Normal Calibration

1.Press TARE/HOLD key during self-checking the display will show `F1 chk`

2.Press TARE/HOLD key to select until the display show `F3 cal`

3.Enter the function by pressing ZERO key, display will show `desc`

4.Press TARE/HOLD key to select until the display shows `cal`

5. Press ZERO key to confirm, the display will show `Kg`

a. If calibrating in **kg**, continue step 6

b. If calibrating in **lb**, press TARE/HOLD key, **lb** will be show on the display

Make sure there are no loads on the platform

PS: Press TARE/HOLD key to choose "kg" or "lb" unit, capacity will be show in kg or lb values.

6.Enter the function by pressing ZERO key, display will be shown `unload`
Currently adjustment, and wait few seconds for stable indicator on.

7.Enter the function by pressing ZERO key, display will be shown `006.000`

8.If want to change by using the keys, press TARE/HOLD key and UNIT/M+ key to change the weight value

9.Press ZERO key to enter, display will be show

load

10. Load the calibration mass weight (full scale capacity) on the platform and wait few seconds for display stability.

11. After the stable indicator on press ZERO key, display will be shown

pass

Remove the load from platform, Display will be self-test and come to the normal weighing mode.

If display will be shown any error or incorrect value, repeat the procedure again.

Note: If it's required to calibrate, linear calibration must be operated firstly, then follow to normal calibration

8. RS-232 OUTPUT

AS-WT-WV series indicator can take out data through RS 232 output.

8.1 Specifications

RS-232 output of weighing data
Code : ASCII
Data bits : 8 data bits
Parity : No Parity
Baud rate : 1200-115200bps

8.2 RS-232 (9pin D type connector)

Pin 2	RXD	Input	Receiving data
Pin 3	TXD	Output	Transmission data
Pin 5	GND	—	Signal ground

9pin D Connecter:

Indicator		**Computer**
Pin 2:	———	Pin 3
Pin 3:	———	Pin 2
Pin 5:	———	Pin 5

8. 3 Continuously output protocol

HEADER1: ST=STABLE， US=UNSTABLE
HEADER2: NT=NET， GS=GROSS,WEIGHING UNIT:KG
Stable data communication

S	T	,	G	S								k	g	CR	LF
-HEADER1-			- HEADER2-			--- WEIGHT DATA --						-WEIGHT UNIT-		TERMINATOR	

8.4 Print Formats

NO: 1
G: 25.0kg
N: 25.0kg
T: 0.0kg
Total: 25.0kg

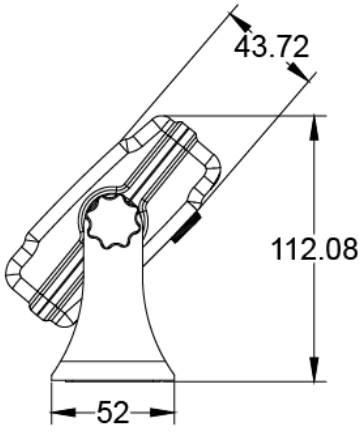
NO: 2
G: 25.0kg
N: 25.0kg
T: 0.0kg
Total: 50.0kg

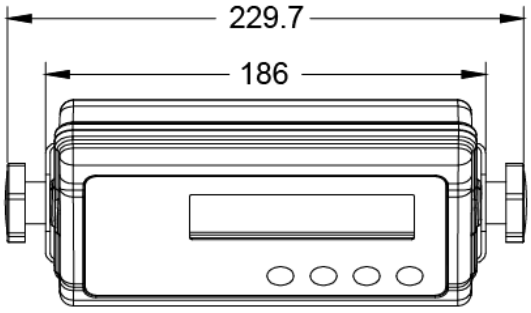
9. TECHNICAL DATA

9.1 General Specification

Model	AS-WT-VW
Display	22mm digit LCD display with white LED backlight
Housing	ABS plastic
Operating Temperature	0°C - 40°C / 32°F - 104°F
Resolution	30000d
Key Pad	4 mechanical keys
Power	AC Adaptor (12V/500mA)/ Dry Battery (1.5Vx4 AA)
Units of Measure	kg/g/lb/oz/lb:oz
Calibration	Automatic External
Interface	RS-232 Output standard
Load cell drive Voltage	3.3V/150mA
Load Cells	Up to 4 load cell
ADC	Sigma Delta
ADC Update	≤1/10 second
Stabilization Time	One seconds typical
Gross Weight	1.4kg
Net Weight	0.8kg
Dimensions	43.72(W)x229.7(D)x112.08(H)mm

9.2 Overall Dimensions

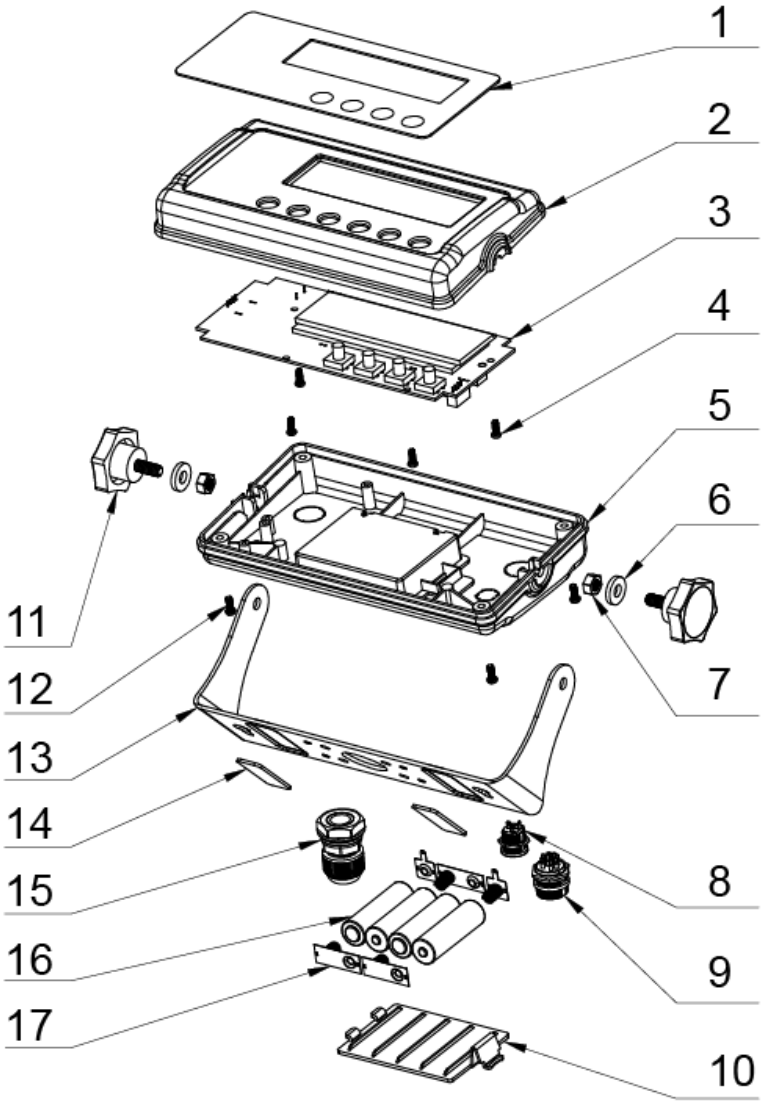




10. ERROR CODES

Error Message	Description	Solution
Err 4	Zero setting error	Zero setting range exceeded due to switching on. Make sure platform empty.
--ol--	Over range	Remove the load. Re calibrate
Err 6	A/D value out of range	Make sure platform empty and check the pan is installed proper. Check the load cell connectors.
BAT LO	Battery low	Re charge battery, check the voltages.

11. EXPLODER DRAWING



No.	Name	Spec.
1.	Overlay	1
2.	Top cover	1
3.	Main board	1
4.	+ self thread screw	4;ST3x8
5.	Bottom cover	1
6.	Gasket	2
7.	Nut	2;M6
8.	AC adapter jack	1
9.	Air connector	1
10.	Battery cover	1
11.	Screw	2;M6
12.	+ screw	4;M3*8
13.	Bracket	1
14.	Rubber mat for bracket	2
15.	Cable gland	1;M16
16.	Battery	4;AA
17.	Battery clip	1