

# **T903**

## **Portable Weight Indicator**


**User's Guide**

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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


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 Please read this manual carefully before operating the indicator.

## 1 Introduction

### 1.1 Warnings

Failure to heed may result in serious injury or death.

-  DO NOT allow inexperienced persons to operate the indicator.
-  DO NOT operate without all shields and guards in place.
-  DO NOT step on the unit.
-  DO NOT use for purposes other than weight taking.
-  DO NOT place fingers into slots or possible pinch points.
-  DO NOT use the indicator if any of the components are cracked.
-  DO NOT exceed the rated load limit of the indicator.
-  DO NOT make alterations or modifications to the indicator.
-  DO NOT remove or obscure warning labels or seals.

Before opening the indicator, ensure the power cord is disconnected from the outlet.

### 1.2 Features

This indicator is an advanced high resolution portable weight indicator. It is housed in IP67 ABS+TPR enclosure with built-in printer. Its top panel consists of a dual-line 15-segment high-contrast BTN LCD display, and 5X4-button flat membrane keypad. With built-in high capacity rechargeable battery, easy-to-use user interface, dedicated powerful axle weighing applications, it is an ideal weight indicator for axle weighing, as well as various weighing scales and applications.

- IP67 ABS+TPR portable housing
- Built-in 58mm thermal or label printer with quick paper installation
- Ultra-contrast 0.8inch/20.32mm white BTN LCD display
- Dual 15-segment display for easy 0~9, a~z, A~Z letter input
- 20-key flat membrane numeric keypad
- Up to 8 loadcells/scales input via cable or wirelessly
- Real-time clock with backup battery
- Built-in 3.7V/4.0Ah high capacity maintenance-free rechargeable battery
- Universal 100-240Vac power supply
- Full duplex RS-232 communication port and various optional I/O ports
- Basic weighing, Multi-channel Axle Weighing and Axle Sum Weighing
- Alphanumeric input method for typing in up to 7 characters

## 1.3 Specifications

### Metrology Performance

Accuracy Class	Class III (OIML R76 eqv.)
Number of Cable / RF Channels	8x
Overload Range	100 %F.S.+9e
Tare Range	100 %F.S.
Center of Zero	+/-0.25 e
Return-to-Zero Range	5.0 e
Zero-tracking	0.5 e/s (dft.)

### User Interface

LCD Display	7-digit White BTN LCD, 0.8inch/20mm 15-segment
Keypad	20-key Flat Membrane Panel
Interface	GX16-5P for RS-232

### Serial Communication

Port	Full Duplex RS-232
Baudrate	1200 / 2400 / 4800 / 9600 bps
Data Format	1-bit start, 8-bit data, 1-bit stop
Parity	None Parity
Output Mode	Continuous / Request

### Built-in Printer

Printing Method	Thermal
Speed	65 mm/s (max.)
Resolution	8 dot/mm, 384 dot/line
Printing Width	48 mm (max.)
Printing Life	50 km
Paper	Thermal, 57+/-0.5 mm in width, ≤Φ50mm

### Power Supply

AC Power Voltage	100~240 Vac, 50~60 Hz
Built-in Battery	3.7V4.0Ah li-ion rechargeable battery
Battery Life	20 ~ 160 hours (typ.)
Battery Charging Cycles	over 1000 cycles (typ.)

### Enclosure

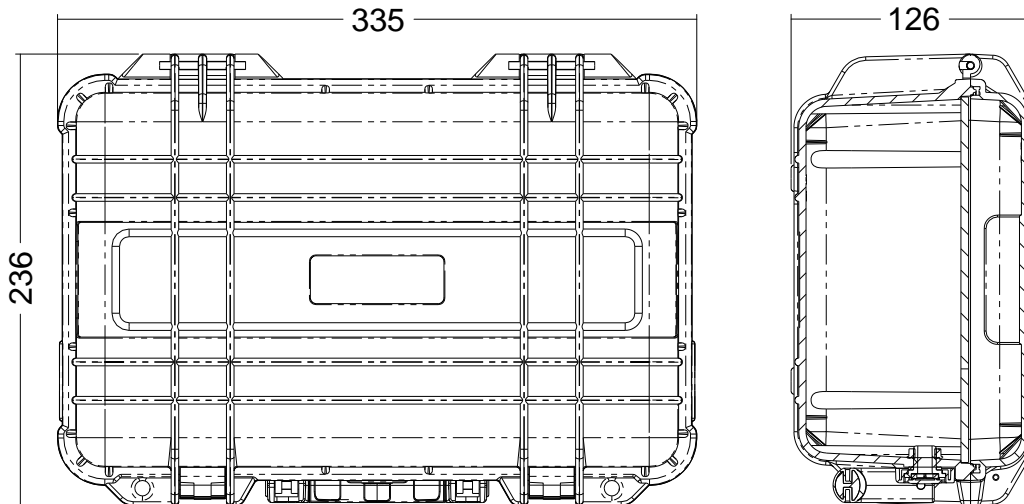
Panel Material	SS304 stainless steel
Indicator Dimensions	335 x 236 x 126 mm (13.2 x 9.3 x 5.0 inch)

**Environmental**

Operating Temperature	-10 ~ +40 degC (+14 ~ +104 degF)
Storage Temperature	-20 ~ +50 degC (-4 ~ +122 degF)
Operating Humidity	0 ~ 90 % at 20 degC (rel.)

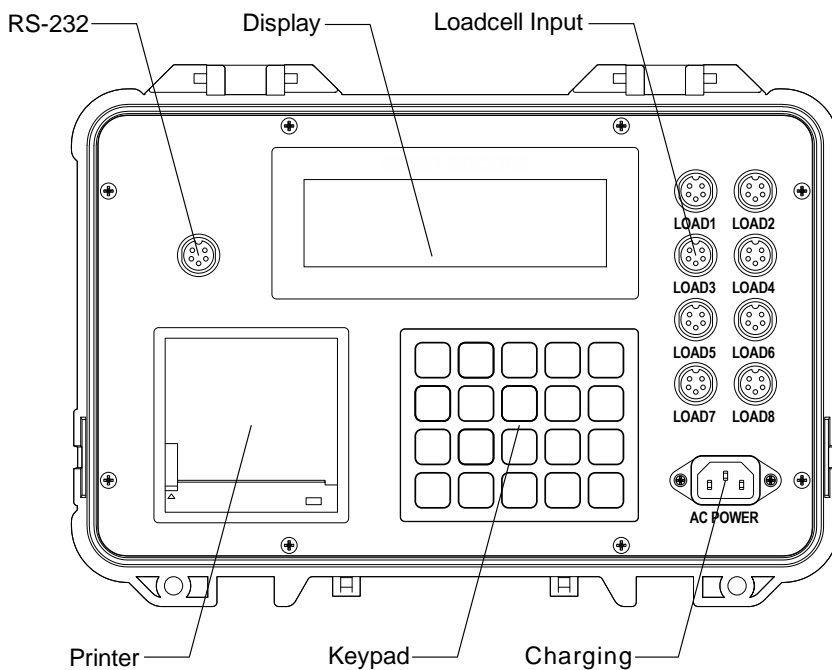
**2 Installation**

**2.1 Dimensions**

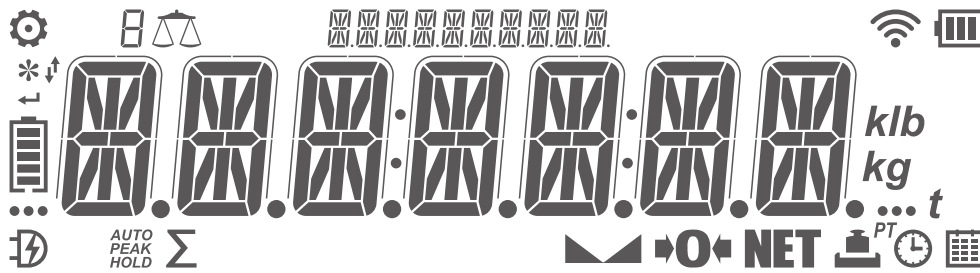


Dimensions in Millimeters

**2.2 Top Panel**



**2.2.1 Display**















Section	Display Area
Prompt	
Message	
Unit	<p><i>klb</i> <i>kg</i> <i>t</i></p>
Weighing Status	

### 2.2.2 Symbol

Symbol	Definition	Indication
	Stable	Load is stable.
	Zero	Load is within center of zero (+/-0.25e).
<b>NET</b>	Tared	Load is tared.
	Net	net weight of a record
	Tare	tare weight of a record
	Gross	gross weight of a record
<i>PT</i>	Preset Tare	Load is tared by preset tare.
	Time	time of a record
	Date	date of a record
	Date & Time	DateTime mode
...	More to show	More digits or characters show at left-side or right-side.
<b>kg</b>	kilo gram	unit of weight (metric system)
<b>t</b>	ton	
<b>lb</b>	pound	unit of weight (imperial system)
<b>klb</b>	kilo pound	
	Configuration	In configuration
*	capslock	shows if capslock is enabled
	scroll to select	selectable parameter value
	type to input	user input parameter value

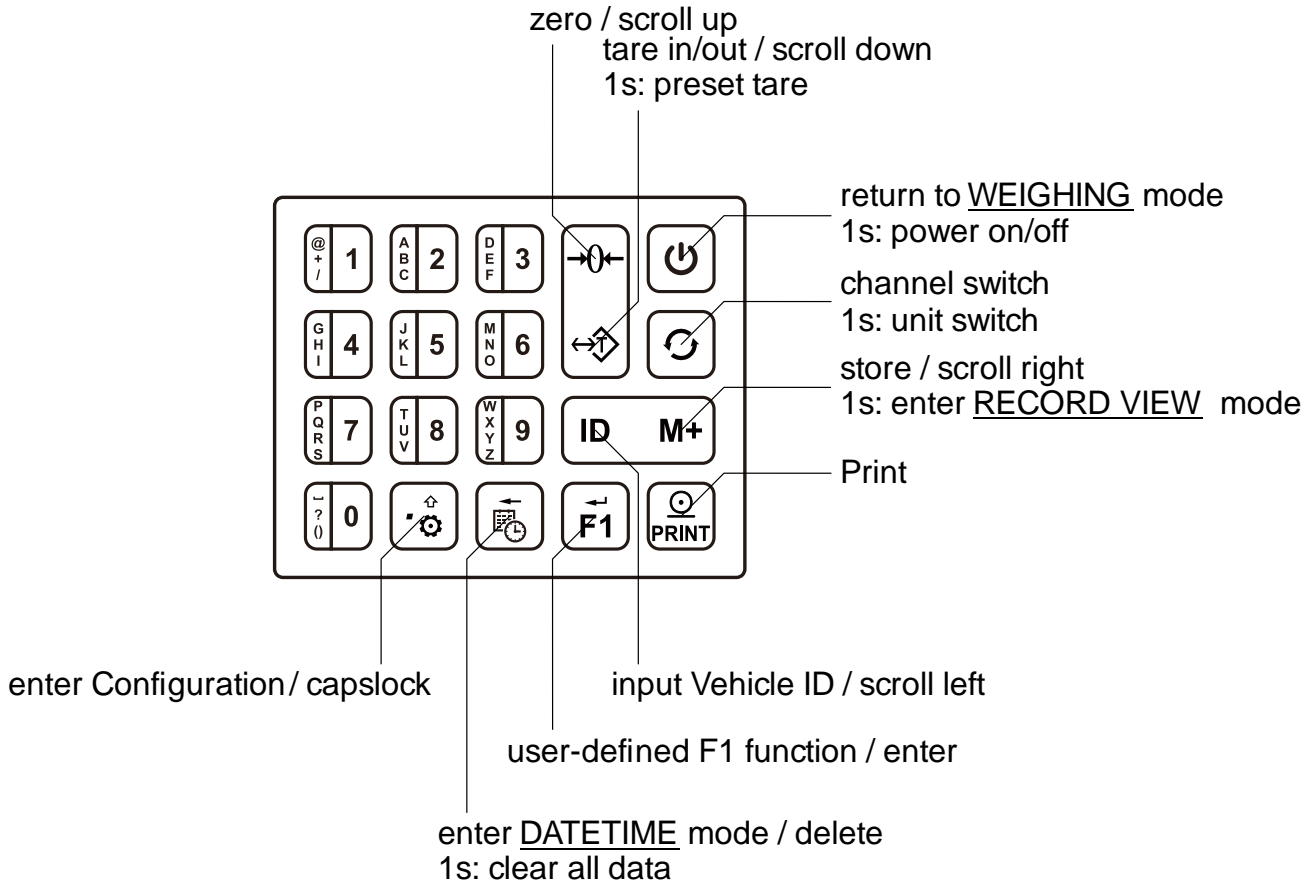












	Battery Status	 shows if battery is dead, charging is needed.
		 shows if battery is less than 20%.
		 shows if battery is less than 40%.
		 shows if battery is less than 60%.
		 shows if battery is less than 80%.
		 shows if battery is full, scrolls if it is being charged.
	AC Power	AC power is supplied.
<i>HOLD</i>	Hold	Weight reading is locked in HOLD mode.
<i>PEAK HOLD</i>	Peak-Hold	Weight reading is locked in PEAK-HOLD mode.
<i>AUTO HOLD</i>	Auto-Hold	Weight reading is locked in AUTO-HOLD mode.
	Total View	in <u>TOTAL VIEW</u> mode
	Channel	the channel number of multiple load
	RF Signal	remote device RF signal status
	Remote Battery	remote device battery status

### 2.2.3 Keypad

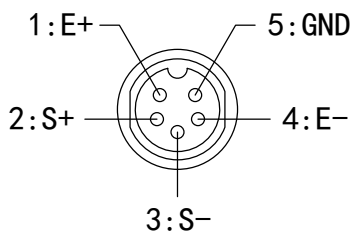
The beeper emits short sound, indicating the pressed key action is valid.

1s: press and keep pressing for 1 second.

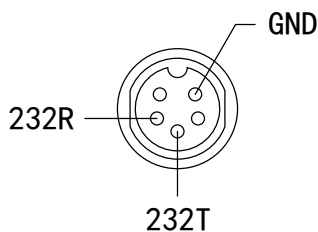


Key	Name	Function
	On/Off	return to <u>WEIGHING</u> mode; 1s: power on/off
	Switch	switch the weight of overall and each channel; 1s: switch unit
	Zero ↑	zero / scroll up
	Tare ↓	tare in/out / scroll down; 1s: preset tare
	ID ←	enter <u>ALPHANUMBERIC INPUT</u> mode to input Vehicle ID / scroll left
	Store →	store the weighing record / scroll right; 1s: enter <u>RECORD VIEW</u> mode
	Print	print
	F1	user-defined F1 function / enter
	Clock	enter <u>DATETIME</u> mode / delete; 1s: clear all
	Setup	enter Configuration / capslock

## 2.3 Interface



E-: Loadcell Negative Excitation  
 E+: Loadcell Positive Excitation  
 S-: Loadcell Negative Signal  
 S+: Loadcell Positive Signal  
 GND: Loadcell Ground



232T: RS-232 Transmit  
 232R: RS-232 Receive  
 GND: RS-232 Ground

## 2.4 Built-in Battery


This indicator has a built-in 3.7V4.0Ah rechargeable li-ion battery.

Depending on daily operations, especially printing jobs, and the configuration of display luminance and sleep timing, as well as the loadcell resistance, battery works from 20 hours to 150 hours. When powered by the built-in battery, proper configurations of Auto-Off Timing, Sleep Timing and Display Luminance, helps to reduce power consumption and conserve battery life.

The AC power charges battery automatically. Charging time for a completely discharged battery is approximately 8 to 12 hours, depending on battery's charged cycles and charging temperature.

During battery charging,  scrolls.

After battery is fully charged,  shows.

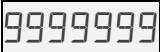

 To obtain the built-in battery maximum service life, stored indicator shall be re-charged every three months.

## 3 Operation

### 3.1 Power On / Off

When powered off

 Press  1s to power on the indicator.

Indicator starts with power-on beeping, and  to  count-down display test. It then performs weight detection until load becomes stable. Finally, the indicator Auto Zero the scale if properly configured.

In WEIGHING mode

 Press  1s to power off the indicator.

Message  shows, indicating the indicator is being powered off.

### 3.2 Zero

Zero function takes out small deviations in zero when scale is unloaded, and sets a new zero reading of the scale.

In WEIGHING mode

 Press  to set the scale to zero.

Symbol  shows, indicating load is within +/-0.25e.


### 3.3 Tare

Tare is typically used to zero out a known weight such as a packing container or pallet and display the load in NET mode.

Tare will reduce the apparent overloading range of the scale. For example, tare in a 20kg container on a 100kg scale, the scale will overload at a new net weight of 80kg (100kg-20kg) plus 9.0e.

#### 3.3.1 Tare In

In GROSS mode

 Press  to tare in the weight.

Symbol **NET** shows, indicating load is in NET mode.

#### 3.3.2 Tare Out

In NET mode

 Press  to tare out the weight.


Symbol **NET** hides, indicating load is in GROSS mode.

### 3.3.3 Preset Tare

Preset Tare function is used to input a known tare weight (as a packing container or pallet) instead of placing it on the scale and taring manually.

The input tare value is under current measurement unit. For example, if measurement unit is previously switched to t, then user's input 2.3 will set the tare as 2.3t.

In GROSS mode

Press  1s to enter NUMBER INPUT mode.

Prompt  shows, waiting for user to input preset tare.

Press  1  2  3  4  5  6  7  8  9  0 to input the known tare value.

Press  to exit from NUMBER INPUT mode.

Press  to confirm.


Symbol **NET** shows, indicating load is in NET mode.

Symbol *PT* shows, indicating the tare is preset.

## 3.4 Channel Switch

The Channel Switch function allows user to view the weight reading or the conversion code of each channel which is enabled.

Press  to toggle different channels.

Symbol  shows, and the number on the left of this symbol indicates the channel number.

## 3.5 Unit Switch

The indicator's calibration unit must be kg or lb. The Unit Switch function simply calculates new weight reading as a result of multiplying kg or lb by unit ratio. Therefore, the Unit Switch function does NOT change indicator's verification interval.

Press  1s to toggle various measurement units.

New unit will be activated and saved in nonvolatile memory for next power-up.

## 3.6 Date & Time

In WEIGHING mode

Press  to switch from WEIGHING mode to DATETIME mode.

Symbol  show.

The date is shown in display Prompt section, based on user configured date format.

The time is shown in display Message section, based on user configured time format.

In DATETIME mode

Press to switch from DATETIME mode back to WEIGHING mode.  
 Symbol hide.

### 3.7 Print

Press to print out a weight bill.  
 Message shows, indicating the weight bill is printed out.

### 3.8 Input Vehicle ID

This indicator allows user to input Vehicle ID with up to 7 characters.

Each character can be any of number 0~9, letter A~Z, and symbols @ # \$ % ^ & \_ ~ ' | \ + - \* / = < > .

In WEIGHING mode

Press to enter ALPHANUMBERIC INPUT mode.

Press to input desired character.

The input a~z in lowercase are automatically changed to its uppercase letter.

The input character blinks 2 times before it is selected.

- If the blinking character is the desired one to input, wait until it stops blinking, the character is selected.
- If the blinking character is not the desired one, keep pressing the button to scroll between all the available characters of the button.
- If a new button is pressed, while the previous blinking character is still blinking, the blinking character will stop blinking immediately.

Press to delete the current (rightmost) character.

Press 1s to clear all the characters.

For example, to input the Vehicle ID

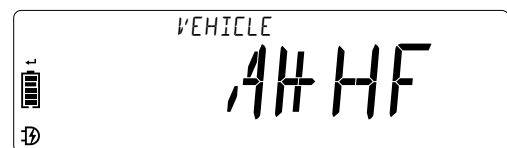
“A#HF310”,

1) quickly press the buttons in sequence,

2) wait until “F” stops blinking,

3) quickly press ,

then message shows.



### 3.9 User F1 Function

The indicator comes with 1 configurable User-defined Keys, which can be assigned to user preferred function.

### 3.10 Weighing Record

### 3.10.1 Store

The indicator requires that the load on the scale falls below +5.0e before next load can be stored. This assures that a load on the scale is stored to the database only once.

In WEIGHING mode

 Press **M+** to store current weight record.

Message  shows, indicating the weight reading is stored.

### 3.10.2 View Record



In WEIGHING mode

 Press **M+** 1s to enter RECORD VIEW mode.

The display Prompt section shows the record's serial no. 151 , for example.

In RECORD VIEW mode

 Press  to scroll up / down to previous/next record.

 Press  to scroll between record's gross weight, net weight, tare weight, date, time, and vehicle id (if truck application is enabled).

Symbol  shows when net weight is shown.

Symbol  shows when tare weight is shown.

Symbol  shows when gross weight is shown.

Symbol  shows when date is shown.

Symbol  shows when time is shown.

The display Prompt section  shows when Vehicle ID is shown.

The display Prompt section  shows when the Number of Axle is shown.


The display Prompt section  shows when the weight of each Axle is shown.

 Press  to exit and return to WEIGHING mode.

### 3.10.3 View Total



In RECORD VIEW mode


 Press **M+** 1s to enter TOTAL VIEW mode.

The display Prompt section shows the number of totals, e.g. .

Symbol  $\Sigma$  shows, indicating it is in TOTAL VIEW mode.

In TOTAL VIEW mode

 Press  to switch the weight type of the total weight between total net weight, total gross weight, total tare weight.

Symbol  shows, indicating the weight reading is total net weight.

Symbol  shows, indicating the weight reading is total tare weight.

Symbol  shows, indicating the weight reading is total gross weight.

 Press  to exit and return to WEIGHING mode.

Symbol  $\Sigma$  hides, indicating it is in WEIGHING mode.

### 3.10.4 Delete Record

In RECORD VIEW mode

 Press  to delete the Record.

Prompt `DELETE?` and symbol  $\updownarrow$  shows, waiting for user to select `YES` / `NO`.

 Press  /  to scroll up / down the selection.

 Press  to confirm.

If `YES` is selected, the record will be deleted eventually.

If `NO` is selected, the deletion of this record will be cancelled.

### 3.10.5 Clear All Records

In RECORD VIEW mode

 Press  1s to clear all the Records.

Prompt `CLEAR ALL?` and symbol  $\updownarrow$  shows, waiting for user to select `YES` / `NO`.

 Press  /  to scroll up / down the selection.

 Press  to confirm.

If `YES` is selected, all the records will be deleted eventually.

If `NO` is selected, the deletion of all records will be cancelled.

Message `NO DATA` shows, indicating that all the records are cleared. The indicator will return to WEIGHING mode automatically.

### 3.10.6 Re-print Bill

In RECORD VIEW mode

 Press  to re-print current record.

Message `PRINT` shows, indicating the weight record is re-printed out.

## 3.11 Axle Sum Weighing

The Axle Sum Weighing application enables the indicator to enter dedicated Axle Sum mode, so as to sum up the weight of multiple axles of a vehicle, one axle by one each time, when a vehicle drives through the scale.

Before a vehicle comes onto the scale, the number of axle needs to be set in advance. Once the number of axle is defined, this number will be applied to next vehicles, until a new number is re-defined.

The following is an example of a typical Axle Sum Weighing sequence.

In WEIGHING mode

#### Step 1 Zero Scale

Ensure the indicator reads zero before the vehicle drives onto the scale.

- Press to zero the scale, if needed.  
Symbol shows, indicating load is within +/-0.25e.



### Step 2 Input Vehicle ID

- Press to enter ALPHANUMERIC INPUT mode, if needed.

Prompt and symbol shows, waiting for user to input the Vehicle ID.



In ALPHANUMERIC INPUT mode

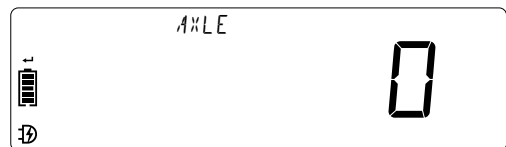
- Press to input Vehicle ID with up to 7 characters.
- Press to confirm the input and return to WEIGHING mode.



### Step 3 Set the Number of Axle

- Press to enter Axle Set.

Prompt and symbol shows, waiting for user to input the number of axle.



- Press to input the number of target axle, 3 (for example).

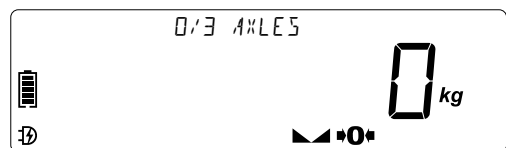
Valid number of axle is from 2 to 6.



- Press to confirm the input.

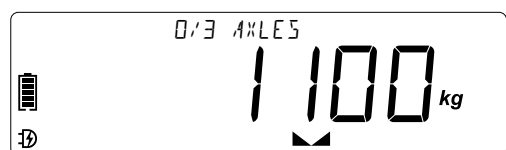
If number is 0, 1, or exceeds 6, message shows, and the number of axle will be set as undefined.

### Step 4 Sum Up Axle Weight



Prompt shows, indicating no axle's weight is stored.  
 The weight reading now is the weight of the 1st axle.

Wait until the vehicle's 1st axle stands on the scale without motion.



- Press to view each channel of the channel 1 & 2 pair, if needed.

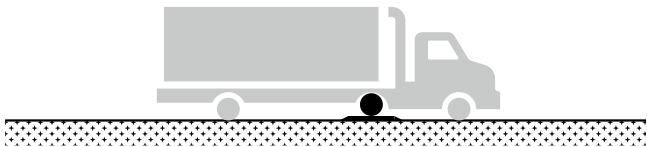


Press **M+** to store the weight of the 1st axle without printing, or press **PRINT** to store and print the weight of that at the same time.



**Prompt** 1/3 AXLES shows, indicating 1 axle's weight is stored.  
 The weight reading now is the weight of the 2nd axle.

Wait until the vehicle's 2nd axle stands on the scale without motion.



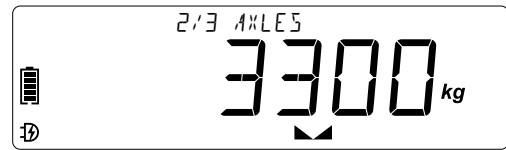
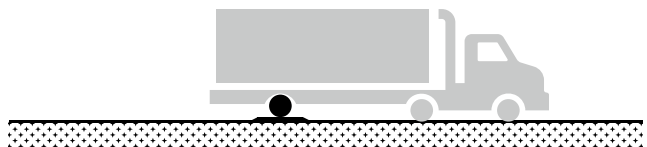
Press **↻** to view each channel of the channel 1 & 2 pair, if needed.

Press **M+** to store the weight of the 2nd axle without printing, or press **PRINT** to store and print the weight of that at the same time.



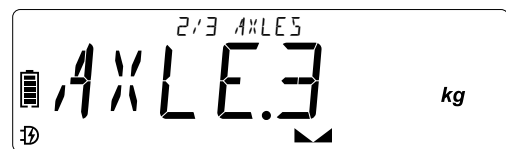
**Prompt** 2/3 AXLES shows, indicating 2 axles' weight are stored.  
 The weight reading now is the weight of the 2nd axle.

Wait until the vehicle's 3rd axle stands on the scale without motion.



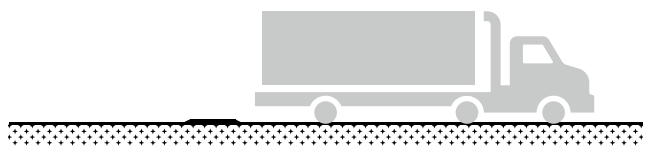
Press **↻** to view each channel of the channel 1 & 2 pair, if needed.

Press **M+** to store the weight of the 3rd axle without printing, or press **PRINT** to store and print the weight of that at the same time.



**Prompt** 3/3 TOTAL shows, indicating 3 axles' weight are stored.  
 The weight reading now is fixed with the total weight of the all axles.

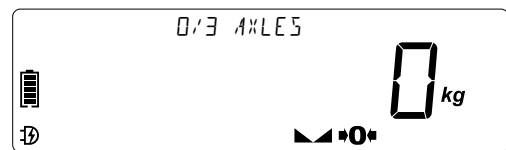
Wait until the vehicle leaves the scale.



Press **↻** to view each channel of the channel 1 & 2 pair, if needed.


Press **⏻** to finish the axle sum weighing.

A new axle sum weighing process can be re-started.
















## 4 Configuration

### 4.1 Menu Navigation

In Configuration, symbol  shows.

In **WEIGHING** mode

-  Press  to enter Configuration. Parameter  shows.
-  Press  /  to scroll up / down the blinking digit of the parameter number.
-  Press  /  to move left / right the blinking digit of the parameter number.
-  Press  to exit from the parameter.
-  Press  to enter the parameter.

After entering the parameter

If the parameter value is selectable, symbol  shows.

-  Press  /  to scroll up / down the selection.

If the parameter value is to be typed in, symbol  shows.

-  Press  to input the value.

## 4.2 Parameters

	Name	Options [Default Setting]
C01	System Unit	01=kg, [02]=lb
C02	Graduation	[01]=1, 02=2, 03=5
C03	Decimal Point	01=No Decimal, [02]=X.X, 03=X.XX, 04=X.XXX, 05=X.XXXX
C04	Max Capacity	Number Input (0.00000~999999)
C05	Zero Calibration	[01]=No, 02=Yes
C06	Load Calibration	[01]=No, 02=Yes
C07	System ID	Read-Only
C08	Version	Read-Only
C09	Reset	[01]=No, 02=Yes
C10	Auto-Off Timing	[01]=Disabled, 02=3min, 03=5min, 04=10min, 05=15min, 06=30min, 07=60min
C11	Sleep Timing	01=Disabled, 02=3sec, 03=5sec, 04=10sec, 05=15sec, [06]=30sec, 07=60sec
C12	Luminance	01=Low, [02]=Medium, 03=High
C13	User F1 Key	[01]=Disabled, 02=Sleep, 03=Extended Resolution View, 04=Conversion Code View, 05=Hold, 06=Peak Hold, 07=Auto Hold, 08= Axle Set
C14	Comm Mode	[01]=No Output, 02=Output Continuously, 03=Output Upon Request
C15	Comm Baudrate	01=1200bps, 02=2400bps, 03=4800bps, [04]=9600bps
C16	Comm Format	[01]=18-1 Remote Display, 02=18-3 Command Request, 03=18-5 PC or Remote Display

C17	Auto-Zero Range	01=Disabled, 02=2%F.S., 03=3%F.S., 04=4%F.S., 05=10%F.S., [06]=20%F.S., 07=50%F.S., 08=100%F.S.
C18	Key-Zero Range	01=Disabled, 02=2%F.S., 03=3%F.S., [04]=4%F.S., 05=10%F.S., 06=20%F.S., 07=50%F.S., 08=100%F.S.
C19	Zero-Track Range	01=0.1e, 02=0.2e, 03=0.3e, [04]=0.5e, 05=0.75e, 06=1e, 07=1.25e, 08=1.5e, 09=2e, 10=2.5e, 11=3e, 12=5e, 13=7e, 14=10e
C20	Zero-Track Speed	01=Disabled, 02=0.5sec, [03]=1sec, 04=2sec
C21	Filter	01~08
C22	Stable Timing	[01]=0.5sec, 02=1sec, 03=1.5sec, 04=2sec, 05=3sec, 06=5sec
C23	Stable Range	01=0.1e, 02=0.2e, 03=0.3e, [04]=0.5e, 05=0.75e, 06=1e, 07=1.25e, 08=1.5e, 09=2e, 10=2.5e, 11=3e, 12=5e, 13=7e, 14=10e
C24	Ton	[01]=Disabled, 02=Enabled
C25	Pound	01=Disabled, [02]=Enabled
C26	Kilo Pound	[01]=Disabled, 02=Enabled
C27	Enable	01=Ch1, 02=Ch1/2, 03=Ch1/2/4, 04=Ch1/3/4, [05]=Ch1/2/3/4, 06=Ch1/2/3/4/5/6, 07=Ch1/2/3/4/5/6/7/8
C28	Ch 1 Ratio	Number Input (0.00000~999999)
C29	Ch 2 Ratio	Number Input (0.00000~999999)
C30	Ch 3 Ratio	Number Input (0.00000~999999)
C31	Ch 4 Ratio	Number Input (0.00000~999999)
C32	Band	[01]~16
C33	Ch 1 Address	Number Input (000~255)
C34	Ch 2 Address	Number Input (000~255)
C35	Ch 3 Address	Number Input (000~255)
C36	Ch 4 Address	Number Input (000~255)
C37	Ch 5 Address	Number Input (000~255)
C38	Ch 6 Address	Number Input (000~255)
C39	Ch 7 Address	Number Input (000~255)
C40	Ch 8 Address	Number Input (000~255)
C41	Scan	[01]=No, 02=Yes
C42	Axle Sum Mode	[01]=Disabled, 02=Enabled
C43	Print Axle Info	01=Disabled, [02]=Enabled
C44	Print Net Info	01=Disabled, [02]=Enabled
C45	Print Tare Info	01=Disabled, [02]=Enabled

C46	Date Format	01=YY.MM.DD, 02=YY/MM/DD, 03=DD-MM-YY, 04=DD/MM/YY, [05]=MM-DD-YY, 06=MM/DD/YY
C47	Time Format	01=HH:MM:SS, [02]=HH:MM:SSAM/PM
C48	Date Set	Date Input (as configured Date Format)
C49	Time Set	Time Input (00:00:00~23:59:59)
C50	Print Mode	[01]=Disabled, 02=Key
C51	Store Before Print	[01]=Disabled, 02=Enabled
C52	Reprint Times	[01]=X1, 02=X2, 03=X3

## 5 Communication

This indicator is equipped with one standard full duplex RS-232 serial communication port, intended for interfacing extended printer, scoreboard and computer, etc.

### 5.1 Byte Format

The indicator outputs data in the format 8N1, which is 1-bit start flag, 8-bit data, 1-bit stop flag, and no checking bit.

### 5.2 Output Data Frame

#### 5.2.1 18-3 Command Request

The Frame 2 is consisted of 17 bytes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ST	-	X	X	X	X	X	X	X	X	SP	k	g	SP	G	CR	LF

The 1st byte is always fixed to ASCII code 0x02 (Start of Transmission).

The 2nd byte indicates the weight data polarity.

- [-]: negative
- [ ]: positive

From 3rd to 10th, 8 bytes XXXXXXXX are the weight data, including decimal point.

The 11th byte is always fixed to SPACE.

The 12th and 13th, 2 bytes indicates measurement unit.

- [k][g]: kilo gram
- [ ][t]: ton
- [l][b]: pound
- [k][l]: kilo pound

The 14th byte is always fixed to SPACE.

The 15th byte G/N indicates the weight data type.

- [G]: gross
- [N]: net

The 16th and 17th byte are fixed to 0x0D (ASCII CR) and 0x0A (ASCII LF).

#### 5.2.2 18-5 PC or Remote Display

The Frame 1 is consisted of 16 bytes.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ST	-	X	X	X	X	X	X	X	X	k	g	G	M	CR	LF

The 1st byte is always fixed to ASCII code 0x02 (Start of Transmission).

The 2nd byte indicates the weight data polarity.

- [-]: negative
- [ ]: positive

From 3rd to 10th, 8 bytes XXXXXXXX are the weight data, including decimal point.

The 11th and 12th, 2 bytes indicates measurement unit.

- [k][g]: kilo gram
- [ ][t]: ton
- [l][b]: pound
- [k][l]: kilo pound

The 13th byte G/N indicates the weight data type.

- [G]: gross
- [N]: net

The 14th byte S/U/V/N indicates the load status.



- [ ]: valid
- [M]: motion
- [O]: overload/underload

The 15th and 16th byte are fixed to 0x0D (ASCII CR) and 0x0A (ASCII LF).

## 6 Appendix

### 6.1 Troubleshooting

Simple problems can be resolved with below listed solutions. If problems still exist, please contact your local representative for help.

Symptom	Possible Cause	Suggested Solution
not power-on after  key pressed	defective power adaptor	contact representative
	discharged or defective battery	charge battery
	defective power socket	contact representative
	defective  key	press harder and keep pressing for 1s
	defective mainboard	contact representative
no action taken after key pressed	indicator is disturbed	re-boot indicator
	defective key	contact representative
weight reading is not zero when no load	loadcell stressed too long	unload scale in storage
	loadcell zero drifts	change Zero-tracking setting
	defective loadcell	contact representative
large error in weight reading	scale not zeroed before loading	zero scale before loading
	improper measurement unit	switch to correct unit
	calibration required	re-calibrate the scale
	defective loadcell or mainboard	contact representative
	defective mainboard	contact representative

battery cannot be charged	defective power adaptor	contact representative
	defective power socket	contact representative
	defective battery	contact representative
UUUUUU	overloading	reduce the weight
	loadcell cable is disconnected	check the loadcell
	defective loadcell	contact representative
Err1	weight exceeds allowed range	reduce the weight
Err2	weight is within the zero range	apply more weight
Err3	weight is negative	apply more weight
Err4	load in motion	wait or keep load stable
	weak filter setting	increase filter level
	damped loadcell or mainboard	dry loadcell or mainboard
	defective mainboard	contact representative
	improper parameter settings	reconfigure or recalibrate
Err6	weight exceeds zero range	reduce the weight



