TXI-500F   VER 001

ROAD WEIGHER INDICATOR

OWNER'S MANUAL

TMT
ENGINEERING

NOTE

(1) The unauthorized copying of some or all of this manual is prohibited.

(2) The information contained herein is subject to change without notice.

(3) If there are any questions such as wrong or missing parts of the
    contents listed in this manual, please contact us.

(4) To improve the product performance, functions can be changed with
    no notice.

(5) Please understand that TMT does not have responsibility for a
    demand related to loss, lost profit etc. caused by operating the
    product, regardless of the third clause.

WARNING DEFINITIONS

⚠c	This is warning & caution mark
⚠	This is hazard alert mark
❶	This is useful information mark

INDEX

1. Precautions

⚠ Please be informed that we're not responsible for any incident or mishap caused by partial modification of this product. To avoid such situation, customers need to contact our customer service team or system installation staff in advance, and any modification should be conducted under our surveillance.

◆ Use only approved enhancements and batteries. Do not connect incompatible products. Use only batteries, chargers, adaptor, and enhancements approved by TMT for use with this particular model.
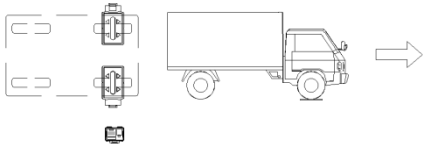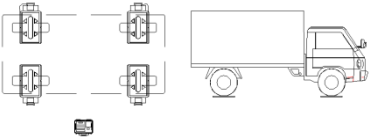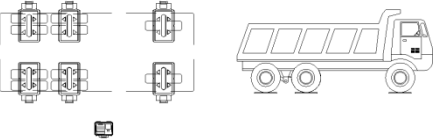   The use of any other types may invalidate any approval or warranty, and may be dangerous. For availability of approved enhancements, please check with your dealer.

◆ Do not install the indicator in strong direct sunlight and dust.

◆ Please confirm that the local voltage is correct for the indicator.

◆ Do not use inflammable substances for cleaning.

◆ Do not use the product in the rain. Keep it dry.

◆ Avoid sudden changes of temperature if possible

◆ Do not use the product in a place with a high-voltage current or severe electronic noise.

◆ Do not use the product in a place with severe vibration.

◆ Do not put too much pressure to keys.

◆ Avoid from the shock of excessive weight.

2. Introduction

◆ Portable & watertight case

◆ Indicators for measuring axle

◆ Wireless communication: ZigBee

◆ Weigh-In-Motion and static weighing mode

◆ Built in thermal printer

◆ Memory capacity: 10K vehicles

◆ Standard RS232C

◆ Alert for over loaded vehicle

◆ Long battery lifetime by one time charging

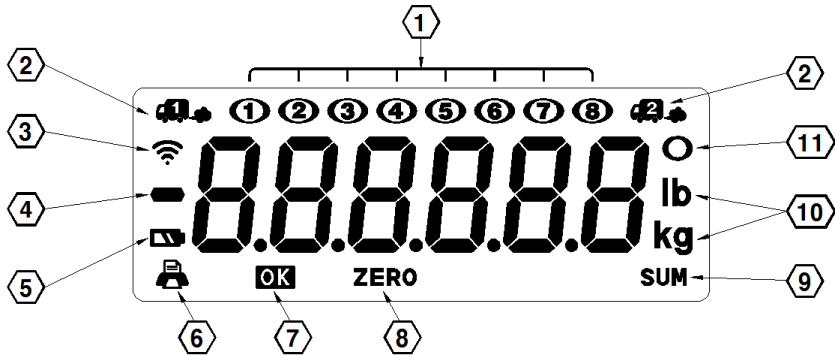◆ Optional USB host (For USB memory stick)

3. Installation

Weighing method	Description
<u>Sequential</u> 2 Axle, 2 Plate Accuracy: ±1~3% (WIM: ±3%) **[Scale ID]** Axle 1☞ Left: 1 / Right: 2	 ⚠ In case of Weigh-In-Motion (WIM), you must install the dummy pad (longer to the length of the vehicle) back and forth on scale.
<u>Synchronous</u> 2 Axle, 4 Plate Accuracy: ±0.1% **[Scale ID]** Axle 1☞ Left: 1 / Right: 2 Axle 2☞ Left: 3 / Right: 4	
<u>Synchronous</u> 3 Axle, 6 Plate Accuracy: ±0.1% **[Scale ID]** Axle 1☞ Left: 1 / Right: 2 Axle 2☞ Left: 3 / Right: 4 Axle 3☞ Left: 5 / Right: 6	 ℹ Can be installed up to maximum 6 axles

4. Description of Panels and Symbols

| No.	Name	Description
1	Display	Display the weight data & message
2	Antenna	3dBi dipole antenna for wireless communication
3	Keypad	Ten key and function key
4	Printer	Thermal printer
5	USB port	USB host port for memory stick
6	DC jack port	AC/DC Adaptor jack for battery charge
7	RS232C port	To PC communication port or firmware coding port

4.1. Display specification

No.	Description
1	Indicates number of scales to be linked or sequence number ❶ Example of display ①②③④⑤⑥⑦⑧ (1 scale)　　①②③④⑤⑥⑦⑧ (2 scales) ①②③④⑤⑥⑦⑧ (3 scales)　　①②③④⑤⑥⑦⑧ (4 scales) ①②③④⑤⑥⑦⑧ (5 scales)　　①②③④⑤⑥⑦⑧ (6 scales) ①②③④⑤⑥⑦⑧ (7 scales)　　①②③④⑤⑥⑦⑧ (8 scales) ①②③④⑤⑥⑦⑧ (9 scales)　　①②③④⑤⑥⑦⑧ (10 scales) ①②③④⑤⑥⑦⑧ (11 scales)　　①②③④⑤⑥⑦⑧ (12 scales)
2	Indicates in-motion mode
3	Indicates the status of the wireless connection
4	Displayed when the weight is minus
5	Indicates when a battery has to be recharged
6	Displayed when printing
7	Displayed when the type the alphabet.
8	Displayed when the weight is zero
9	Indicates the status of accumulated axle weight
10	Indicates the unit used to weight
11	Displayed when the weight is stable

4.2. Keypad specification

Key	Description
ON/OFF	Turn on and off the indicator
0 ~ 9 WXYZ	Use to change input value and input data
LIGHT	Use to back light on and off
*	Use to confirm current time or space key
ZERO	Return the display to zero
PRINT	Use to print the accumulated weight
LINE FEED	Line feed key of printer
NUMBER	Use to input he vehicle number
MEMORY	Use to confirm content of weight memory
+ SUM	Displays weight to be accumulated
↵	Use to store current axle weight

5. Use of Battery Charger

◆ Connect adapter into charge connector (Check if the voltage is 12V 1A).

◆ If a battery jack is connected with an adaptor properly, RED lamp is on.

◆ If it's charged completely, a green lamp is on.

   (The estimated time for charging is about 10 hour but charging time can be varied according to environment condition.)

6. Measurement of Axle Loads

6.1. Sequential weighing in static mode

1	Connect scales by wireless	
2	Setting F03-0 and F01-2.	
3	`888888 0 lb` ZERO	Initial display
4	`[ ]`	NUMBER → Input the vehicle ID → ↵
5	`------`	NUMBER (For 2 seconds) → Input the item code → ↵
6	`4000 lb`	1st axle weighing → Stable lamp → ↵
7	`StEP1`	Stored the 1st axle weight
8	`4720 lb`	2nd axle weighing → Stable lamp → ↵
9	Repeat measures of axle weight (3rd, 4th, 5th)	
10	`4320 lb`	6th axle(Last axle) weighing → Stable lamp → ↵
11	`StEP6`	Stored the 6th axle weight
12	`26080`	+ / SUM → Displays weight to be accumulated
13	PRINT → Print & Save	
14	Repeat the same procedure for each vehicle to be loaded starting from step 3.	

ⓘ How to check an individual pad weight

Step 1: Press and hold ↵ key for 2 seconds, then " *1* – *12*" is displayed.

Step 2: Press scale ID number and then press ↵ key.

Step 3: The weight value of the scale is displayed.

Step 4: To display the total weight of all scales again, you press ⓪ key

ⓘ Undoing the accumulated data

The last axle weight data can be deleted from the accumulated data.

If you press 7_{PQRS} key, clears the previous axle weight.
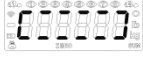
ⓘ Vehicle ID & Item code input method: Refer to '7. Alphabet Input'

6.2. Sequential weighing in WIM (Weigh-In-Motion)

1	Connect scales by wireless
2	Setting F03-1 and F01-2.
3	**0** Initial display
4	[ ] NUMBER → Input the vehicle ID → ↵
5	- - - - - - NUMBER (For 2 seconds) → Input the item code → ↵
6	**4000** 1st axle weighing (WIM)
7	**4720** 2nd axle weighing (WIM)
8	Repeat measures of axle weight (3rd, 4th, 5th)
9	**4320** 6th axle(Last axle) weighing (WIM)
10	**26080** +SUM → Displays weight to be accumulated
11	PRINT → Print & Save
12	Repeat the same procedure for each vehicle to be loaded starting from step 3.

ℹ When "SLo", "FASt" message occurs, in order to initialize, press ↵ key.
Then, must be measured weight again from step 6.

ℹ Vehicle ID & Item code input method: Refer to '7. Alphabet Input'

ℹ Maximum vehicle speed: 10km/h (6mi/h)

6.3. Synchronous weighing method in static mode

1	Connect the scales by wireless (Example: 6 scales)	
2	Setting F03-0 and F01-6.	
3	`888888 0`	Initial display
4	`[_____]`	NUMBER → Input the vehicle ID → ↵
5	`-------`	NUMBER (For 2 seconds) → Input the item code → ↵
6	`27360`	Loaded vehicle entry
7	`27360`	+ SUM → Displays weight to be accumulated
8	PRINT → Print & Save	
9	Repeat the same procedure for each vehicle to be loaded starting from step 3.	

ℹ How to check an individual pad weight

Step 1: Press and hold ↵ key for 2 seconds, then " 1 – 12" is displayed.

Step 2: Press scale ID number and then press ↵ key.

Step 3: The weight value of the scale is displayed.

Step 4: To display the total weight of all scales again, you press 0 key

ℹ Vehicle ID & Item code input method: Refer to '7. Alphabet Input'

7. Alphabet Input

7.1. Input method

English input is similar to the way cellular phone.

Erase previous value

English input is similar to the way cellular phone.

Number/English conversion   Space key
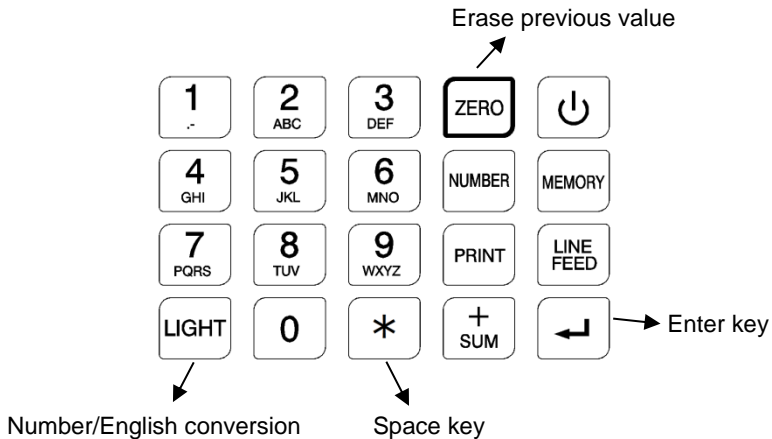
Enter key

7.2. Input the vehicle ID

You can enter up to 10 characters. Vehicle ID is not stored in the memory.

For example ("5-A")

Step1: Press NUMBER key in the weight mode, [   ] is displayed.

Step2: 5 ☞ LIGHT ☞ 1 1 ☞ 2 ☞ ↵

English input wait state

English keypad state
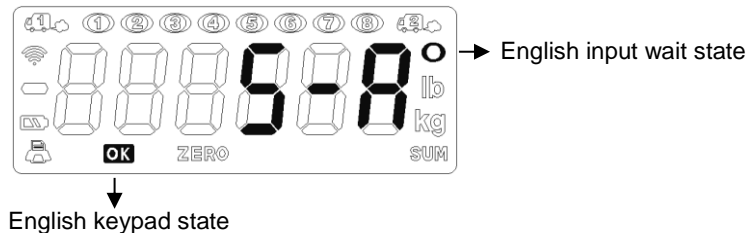
7.3. Input the item code

You can enter up to 10 characters. ⚠c Item code is not stored in the memory.

For example ("IRON")

Step1: Press and hold ▥NUMBER▥ key for more 2 seconds, ▦▦▦▦▦▦▦ is displayed.

Step2: [LIGHT] ☞ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ ☞ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ ☞ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ ☞ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ ☞ $\boxed{↵}$

 → English input wait state
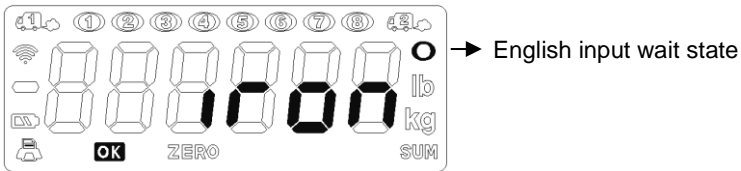
↓
English keypad state

7.4. Input the customer details

You can enter up to 120 characters.
This data is stored in non-volatile memory, and is not lost even if power is off.

For example ("WE WEIGH THE WORLD")

Step1: When the indicator is power off press $\boxed{\begin{array}{c}ON\\OFF\end{array}}$ key while pressing [PRINT] key,

"$Ed\,it$" is displayed.

Step2: Press [PRINT] key again, ▦▦▦▦▦ is displayed.

Step3: [LIGHT] ☞ $\boxed{\begin{array}{c}9\\WXYZ\end{array}}$ ☞ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ ☞ $\boxed{*}$ ☞ $\boxed{\begin{array}{c}9\\WXYZ\end{array}}$ ☞ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ ☞ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ ☞

$\boxed{\begin{array}{c}4\\GHI\end{array}}$ ☞ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ ☞ $\boxed{*}$ ☞ $\boxed{\begin{array}{c}8\\TUV\end{array}}$ ☞ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ $\boxed{\begin{array}{c}4\\GHI\end{array}}$ ☞ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ ☞ $\boxed{*}$ ☞

$\boxed{\begin{array}{c}9\\WXYZ\end{array}}$ ☞ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ $\boxed{\begin{array}{c}6\\MNO\end{array}}$ ☞ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ $\boxed{\begin{array}{c}7\\PQRS\end{array}}$ ☞ $\boxed{\begin{array}{c}5\\JKL\end{array}}$ $\boxed{\begin{array}{c}5\\JKL\end{array}}$ $\boxed{\begin{array}{c}5\\JKL\end{array}}$ ☞ $\boxed{\begin{array}{c}3\\DEF\end{array}}$ ☞ $\boxed{↵}$

 → English input wait state

↓
English keypad state

<u>Delete the previous contents</u>

Step1: When the indicator is power off press 🔲 key while pressing 🔲 key,

" *Ed it*" is displayed.

Step2: Press 🔲 key, " *dELELE*" is displayed and delete the previous contents.

ⓘ Press 🔲 key, exit this mode without any additional work.

7.5. The actual display (Alphabetical)

AbCdEFGhIU

FLanoPQrSE

UUuXYZ
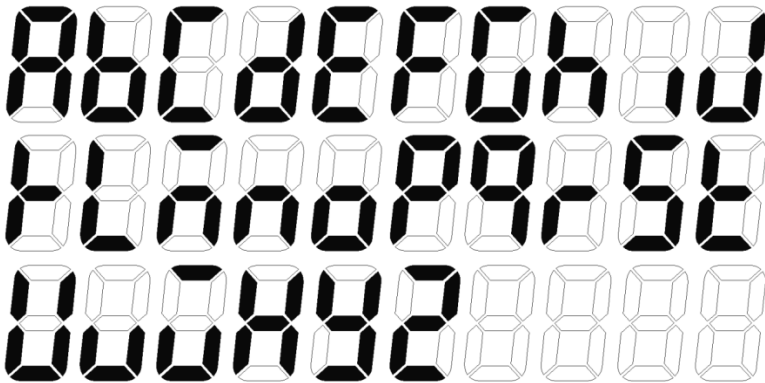
8. Calling the Saved Data

Press MEMORY key in the weight mode and " $1 - 5$ " is displayed.
Refer to the call method of the downside and press $\boxed{1}$ to $\boxed{5}$ key.
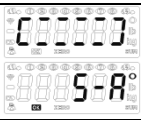
1 **Call the date**

1	141013	Input the year and date→ $\hookleftarrow$ (October 13th 2014)
2	$1-Prt$	Press PRINT key and execute the send to printer & PC
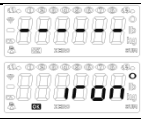
2 **Call the serial number**

1	1234	Input the serial number → $\hookleftarrow$ (1234)
2	$2-Prt$	Press PRINT key and execute the send to printer & PC

3 **Call the vehicle ID**

1	$5-A$	Input the vehicle ID → $\hookleftarrow$ (5-A)
2	$3-Prt$	Press PRINT key and execute the send to printer & PC

4 **Call the item code**

1	$Iron$	Input the item code → $\hookleftarrow$ (IRON)
2	$4-Prt$	Press PRINT key and execute the send to printer & PC

5 **The entire call**

1	$5-Prt$	Press PRINT key and execute the send to printer & PC

8.1. Print form

Please refer to print form of page 20.

8.2. PC data format

◊ 1~20 byte   [Data & time]   [Serial number]

| 1 | 4 | / | 1 | 0 | / | 1 | 3 | , | 1 | 5 | : | 1 | 2 | , | 0 | 1 | 2 | 3 | , |

◊ 21~41   [Vehicle ID]   [Item code]

| A | B | C | D | E | 1 | 2 | 3 | 4 | 5 | , | A | B | C | D | E | F | G | H | I | J |

◊ 42~62   [Axle 1 weight: left / right / sum]

| , | I | b | , | 0 | 1 | 0 | 0 | 0 | , | 0 | 1 | 0 | 0 | 0 | , | 0 | 2 | 0 | 0 | 0 |

◊ 63~80   [Axle 2 weight: left / right / sum]

| , | 0 | 2 | 0 | 0 | 0 | , | 0 | 2 | 0 | 0 | 0 | , | 0 | 4 | 0 | 0 | 0 |

◊ 81~98   [Axle 3 weight: left / right / sum]

| , | 0 | 3 | 0 | 0 | 0 | , | 0 | 3 | 0 | 0 | 0 | , | 0 | 6 | 0 | 0 | 0 |

◊ 99~116   [Axle 4 weight: left / right / sum]

| , | 0 | 4 | 0 | 0 | 0 | , | 0 | 4 | 0 | 0 | 0 | , | 0 | 8 | 0 | 0 | 0 |

◊ 117~134   [Axle 5 weight: left / right / sum]

| , | 0 | 5 | 0 | 0 | 0 | , | 0 | 5 | 0 | 0 | 0 | , | 1 | 0 | 0 | 0 | 0 |

◊ 135~152   [Axle 6 weight: left / right / sum]

| , | 0 | 6 | 0 | 0 | 0 | , | 0 | 6 | 0 | 0 | 0 | , | 1 | 2 | 0 | 0 | 0 |

◊ 153~ 173   [Left sum]   [Left %]   [Right sum]

| , | 0 | 2 | 1 | 0 | 0 | 0 | , | 0 | 5 | 0 | . | 0 | , | 0 | 2 | 1 | 0 | 0 | 0 | , |

◊ 174~188   [Right %]   [Amount]

| 0 | 5 | 0 | . | 0 | , | 0 | 4 | 2 | 0 | 0 | 0 | , | CR | LF |

9. Initialization of Memory

It is used to initialize the data stored in the weight mode.

❶ Stored data: Date, Time, Serial number, Item code, Vehicle ID and Weight.

When the indicator is power off press ON/OFF key while pressing MEMORY key,
Then this mode is started.

Step 1. " - - - - " message is shown on the display.
Step 2. Enter the password (1013), memory is cleared.

10. Real Time Clock

When the indicator is power off press ON/OFF key while pressing * key,
Then this mode is started.

Step 1. " dAtE " message is shown on the display.

Step 2. Input the year, date and press ↵ key

Step 3. " t nE " message is shown on the display.

Step 4. Input the current time and press ↵ key

⚠ Depending on the environment can cause errors. Therefore, recommended setting the time once a month.

11. Setting Mode

11.1. How to enter

When the display is off, press 🔘 key while pressing the 🔘 key.

Step 1. At this time, "$F0 1$" is shown on the display after "$5Et$" message.

At this point, If you press 🔘 key exit the mode.

Step 2. You can select the menu that you want to set. Enter number of set menu

by pressing the ten keys and then press 🔘 key.

11.2. Function menu

◊ F01: Number of scales to be linked wireless (1~12)

Value	Description
1	1 Scale
2	2 Scales
6	6 Scales
12	12 Scales

◊ F02: Stable condition (1~9) ▶ Initial value: 2

Value	Description
1	Sensitive
5	Normal
9	Insensitive

◊ F03: Weigh-In-Motion (0,1) ▶ Initial value: 0

Value	Description
0	Not used
1	WIM

◊ F04: Backlight conditions (0~2) ▶ Initial value: 0

Value	Description
0	Manual ON/OFF
1	Automatic ON/OFF (Weighing: ON / Zero: OFF)
2	Always ON

◊ F05: Backlight brightness level control (0~9) ▶ Initial value: 9

Value	Description	
0	10%	The brightness of the backlight is adjusted depending on this parameter.
4	50%	
9	100%	

◊ F06: Excess weight (0~999999) ▶ Initial value: 0

Value	Description
0	Excess weight print function is not used.
20000	If weight is greater than setting value, excess print function is active.
22000	

◊ F07: Print format (0~3) ▶ Initial value: 0

Value	Description
0	Standard
1	Included left-right balance
2	Included inspector and driver
3	Included left-right balance, inspector and driver

```
WE WEIGH THE WORLD
————————————————————————
DATE: 13/10/2014
TIME: 12:10
SN  : 1234
ITEM: IRON
VEHICLE: AX13569PE
————————————————————————
1_AXLE:10000 kg/12000 kg
              22000 kg
       Excess:  2000 kg
2_AXLE:11000 kg/13000 kg
              24000 kg
————————————————————————
TOTAL: 46000 kg
LEFT : 21000 kg (45.6%)
RIGHT: 26000 kg (53.4%)
————————————————————————
INSPECTOR:

DRIVER:
```

→ Customer details (Max. 5 lines – 120 characters)

→ Item code (Max. 10 characters)
→ Vehicle ID (Max. 10 characters)

→ In case of limit weight for axle is 20000 kg
→ Can measure up to six axles

→ F07-1 / F07-3

→ F07-2 / F07-3

◊ F08: Number of copies (0,1) ▶ Initial value: 0

Value	Description
0	A sheet of paper
1	Two sheet of paper

◊ F09: Line feed (0~9) ▶ Initial value: 5

Value	Description
0	1 line feed automatically after printing
4	5 line feed automatically after printing
9	10 line feed automatically after printing

◊ F10: Enable printer (0,1) ▶ Initial value: 1

Value	Description
0	Not used printer
1	Used printer

◊ F11: Baud rate for RS232C port (0~4) ▶ Initial value: 2

Value	Description
0	2400 bps
1	4800 bps
2	9600 bps
3	19200 bps
4	38400 bps

◊ F12: Data bits, parity for RS232C port (0~2) ▶ Initial value: 0

Value	Description
0	Data 8 bits, Stop 1 bit, Non parity
1	Data 7 bits, Stop 1bit, Even parity
2	Data 7 bits, Stop 1bit, Odd parity

◊ F13: Data format for auxiliary display (In case of F14-3) ▶ Initial value: 0

Value	Description	
0	22 bytes format (CAS standard)	Refer to "13. RS-232C Interface"
1	18 bytes format (AND standard)	

◊ F14: RS232C output (0~2) ▶ Initial value: 0

Value	Description
0	Not used
1	Stream mode (Send the weight of each scales)
2	Press ⌨PRINT key (6.1-step13, 6.2-step11, 6.3-step8) to send the data
3	Stream mode (Depend on the setting of F13)

🛈 F14-1: Send a scale data 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 1 ☞ scale 2 ….

🛈 F14-2: Send a scale data 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ Send a sum weight of scales

🛈 F14-3: Primarily, it is used to send a sum weight to auxiliary display unit.

◊ F15: External wireless output (0,1) ▶ Initial value: 0

Value	Description
0	Not used
1	To wireless auxiliary display unit

◊ F16: USB option (0,1) ▶ Initial value: 0

Value	Description	
0	Not used	Refer to "14. USB Interface"
1	Used	

◊ F17: Power off sync (0,1) ▶ Initial value: 1

Value	Description
0	Not used
1	When turn off the indicator, scales will turn off automatically

12. Test Mode

12.1. How to enter

When the display is off, press $\boxed{\frac{ON}{OFF}}$ key while pressing the $\boxed{1}$ key.

Step 1. At this time, "*tESt* " is shown on the display after "*tESt*" message.

At this point, If you press $\boxed{ZERO}$ key exit the mode.

Step 2. You can select the menu that you want to test. Enter number of test menu by pressing the ten keys and then press $\boxed{\leftarrow}$ key.

12.2. Test menu

◊ TEST 1: Keyboard test

Display	Description
- -	If you press a key that you want to test, the key number is appeared on the display.

◊ TEST 2: Wireless connect test

Display	Description
1 - 12	Pressing the equipment ID of scales, the weight value of the scale is displayed.

◊ TEST 3: Printer test

Display	Description
Print	Print the $\boxed{PRINT}$ key is pressed.

◊ TEST 4: Back light test

Display	Description
Light	Turn on the backlight the $\boxed{LIGHT}$ key is pressed.

◊ TEST 5: Memory test

Display	Description
n̄En̄or Y Good	Press MEMORY key, and then "Good" is displayed. If flash memory has failed, "Error" is displayed.

◊ TEST 6: Real time clock

Display	Description
123056	Make sure the real time clock is goes. (12:30:56 PM)

13. RS-232C Interface

13.1. Specifications

◊ Method: Full-duplex, asynchronous transmission format
◊ Baud rate: 2400, 4800, 9600, 19200, 38400 bps
◊ Data bit: 7, 8 bits
◊ Parity bit: Even or Odd (For 7 data bits) or Non parity (For 8 data bits)
◊ Start bit: 1bit / Stop bit: 1bit
◊ Code: ASCII
◊ Adaptable connector: D-SUB 9pin connector (Female)

1P	2P	3P	4P	5P	6P	7P	8P	9P
N.C.	RXD	TXD	N.C.	GND			N.C.	

13.2. Data format

① Setting mode F14-1 or 2 (⎵ : Space)

				Vehicle ID		Scale ID		Weight data (8bytes)								Unit		Terminator	
				,		,	⎵	⎵	⎵	⎵	2	4	4	0	⎵	k	g	C_R	L_F
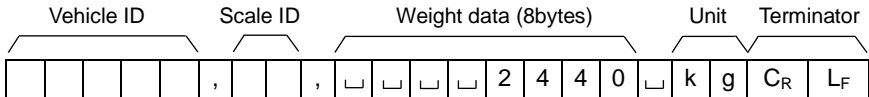
Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Data1	2	4	3	2	0	,	⎵	1	,	⎵	⎵	⎵	⎵	2	4	4	0	⎵	k	g	C_R	L_F
Data2	2	4	3	2	0	,	1	2	,	⎵	⎵	⎵	⎵	2	1	6	0	⎵	k	g	C_R	L_F
Data3	2	4	3	2	0	,	⎵	T	,	⎵	⎵	⎵	⎵	8	2	2	0	⎵	k	g	C_R	L_F

❶ F14-1: Send the weight scale 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 1 ☞ scale 2 ….

❶ F14-2: Send the weight scale 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ Send a sum weight of scales (Scale ID "⎵T")

② Setting mode F14-3

◊ Format 1 (F13-0, 22bytes)

Header 1   Header 2 Fixed   Data   Unit   Terminator

| S | T | , | G | S | , | 1 | ␣ | , | | ␣ | ␣ | ␣ | 8 | 2 | 2 | 0 | ␣ | k | g | C$_R$ | L$_F$ |

	ST	Stable weight data (0x53) (0x54)
Header 1	US	Unstable weight data (0x55) (0x53)
	OL	Overload (0x4F) (0x4C)
	HD	Hold weight data (0x48) (0x44)
Header 2	GS	Gross data (0x47) (0x53)
Data		Example 1) 13.5kg ' ', ' ', ' ', ' ', '1', '3', '.', '5' Example 2) 135kg ' ', ' ', ' ', ' ', '1', '3', '5', ' ' Example 3) -13.5kg '-', ' ', ' ', ' ', '1', '3', '5', ' '
Unit		kg (0x6B) (0x67)
Terminator	C$_R$ L$_F$	(0x0D) (0x0A)

◊ Format 2 (F13-1, 18bytes)
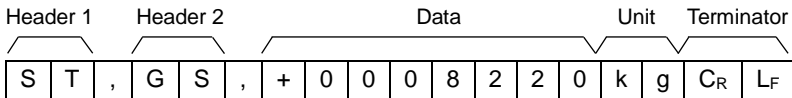
Header 1   Header 2   Data   Unit   Terminator

| S | T | , | G | S | , | + | 0 | 0 | 0 | 8 | 2 | 2 | 0 | k | g | C$_R$ | L$_F$ |

	ST	Stable weight data (0x53) (0x54)
Header 1	US	Unstable weight data (0x55) (0x53)
	OL	Overload (0x4F) (0x4C)
Header 2	GS	Gross data (0x47) (0x53)
Data		The first of the data bit is the polarity (+/-)
Unit		kg (0x6B) (0x67)
Terminator	C$_R$ L$_F$	(0x0D) (0x0A)

14. USB Interface

The USB host option is for sending the weight data to USB memory.
When you print weighing data, it is stored to USB memory stick.
If an error occurs at the time of storage, "⌐h 04" is displayed.

14.1. Specifications

◊ USB 2.0 compatible
◊ FAT32 file system
◊ Adaptable connector (USB A type/ Female)

⚠ If not use FAT32-formatted memory stick, it does not work.

14.2. Data format

◊ The file name is made by date
◊ The weighing data is stored sequentially in the same date file.

◊ Press 〔PRINT〕 key (6.1-step13 / 6.2-step11 / 6.3-step8) to saves the data in the
  memory stick.

◊ When save the data to memory stick, RED lamp of USB port is lit.

ℹ Example: 140506.csv (Comma separated value - Excel file format)

	C	D	E	F	G	H	I
1	Serial No.	Vehicle ID	Item Code	Unit	1 Left	1 Right	1 Total
2	1234	ABCDE12345	ABCDEFGHIJ	kg	12345	12345	24690
3	1235	12345ABCDE	KLMNOPQRST	kg	12345	12345	24690
4							

J	K	L	M	N	O	P	Q	R	S	T	U
2 Left	2 Right	2 Total	3 Left	3 Right	3 Total	4 Left	4 Right	4 Total	5 Left	5 Right	5 Total
12345	12345	24690	12345	12345	24690	12345	12345	24690	12345	12345	24690
12345	12345	24690	12345	12345	24690	12345	12345	24690	12345	12345	24690

V	W	X	Y	Z	AA	AB	AC
6 Left	6 Right	6 Total	Left Total	Ratio(%)	Right Total	Ratio(%)	Amount
12345	12345	24690	74070	50.0	74070	50.0	148140
12345	12345	24690	74070	50.0	74070	50.0	148140

14.3. Data capacity

◊ In case of 1G memory stick: Approx. 5,900,000 data

15. Replacing the Paper Roll

⚠ Be sure to use paper rolls that meet the specifications.
Do not use paper rolls that have the paper glued to the core because the printer cannot detect the paper end correctly.

Step 1. Make sure that the printer is not receiving data.

Step 2. Open the paper roll cover by pressing the cover open button.
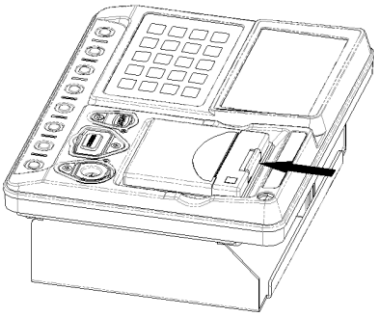
⚠ Do not open the print cover while the printer is operating.

Step 3. Remove the used paper roll core if there is one.

Step 4. Insert the paper roll as shown.
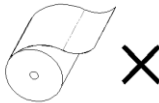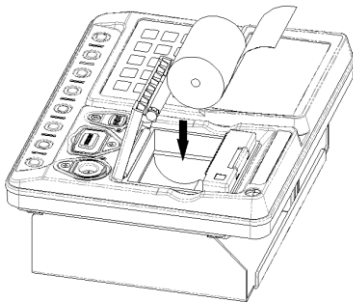
⚠ Be sure to note correct direction that the paper comes off the roll.

Step 5. Pull out a small amount of paper, as shown. Then close the cover.

⚠ When closing the cover, Press the center of printer cover firmly to prevent paper miss-loading

Step 6. Tear off the paper as shown.

16. Specifications

◆ General specifications

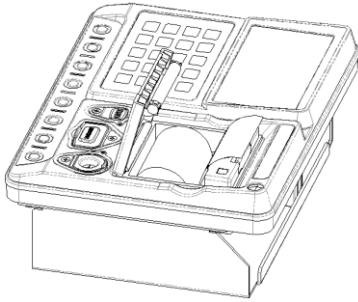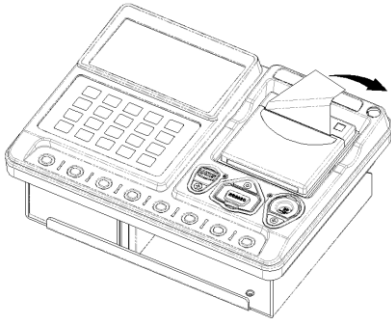|	
Display	6 digit FSTN LCD (Height: 20mm)
Backlight	Amber LED backlight
Operating temperature	-20℃ ～ 60℃
Operating humidity	85% R.H. (No condensation)
Net weight	Approx. 4.2kg
Power	6V⎓ 10A lead-acid battery
Charging adapter	AC/DC Adapter 12V⎓ 1A
Operating time	Approx. 240hr
Option	USB host (For memory stick, OP-01)

◆ Printer specifications

Print method	Thermal mechanism
Columns	24 on English
Font size	12 x 24
Dot density	200 DPI(8dot/mm)
Total dots	384 dots/line
Print speed	60mm/sec
Print paper	Φ40 x 57mm roll paper
Print width	48.0mm
Data buffer	16kbytes
Interface	RS-232C serial
Input power	6V⎓ 1.5A
Dimensions	77.5(W) x 51(D) x 81(H)

◆ Wireless specifications

Wireless method	ZigBee
RF frequency range	2400 ~ 2483.5 MHz
Output power	Max. 4dBm
Channel width	2 MHz
Frequency offset	< ±30ppm
Transmit data rate	250Kbps,500Kbps
Receiver sensitivity	-99dBm (PER <1%)
Maximum input level	0dBm
RF In/out impedance	50 ohm (TXRF, RXRF)
Spurious(2nd harmonics)	< -30dBm
Radio link effective range	Approx. 30M (Open space)

◆ Dimensions
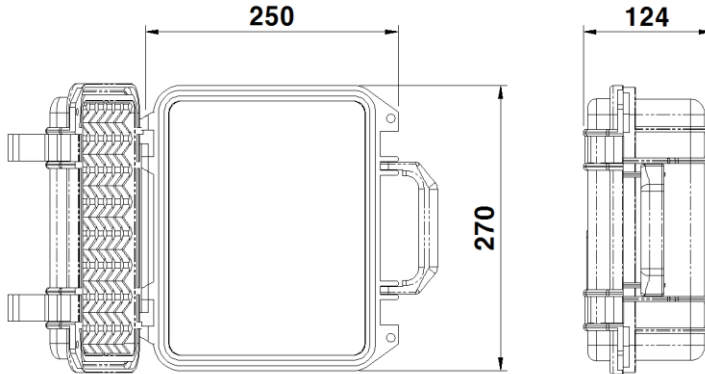
17. Check Message

Code	Description
Ch 03	Something wrong in printer. Please check printer and contact us to resolve this technical problem.
Ch 04	Something wrong in USB port. Please check your memory stick. FAT32-formatted memory stick must be used.
PAPEr	Displayed when there is no paper in the printer. Replace the roll paper.
ouEr	The scale's weight is over maximum capacity. Don't load the article whose weight is heavier than the maximum capacity.
FULL	When memory capacity was exceeded, this is displayed. Please execute a memory initialization.
FASt	In the WIM, occur when the vehicle's speed is too fast. Please pass the vehicle with 10km/h or less.
SLo	In the WIM, occur when the vehicle's speed is too slow.
rF 01 : rF 12	When wireless connection is wrong, scale's ID is displayed. Please check setting of F01 and ID of scale.
bAtt 1 : bAtt 12	When a scale's battery has to be recharged, scale's ID is displayed with once per every 5 seconds.

[MEMO]

[MEMO]