TXI-500F VER 110

RF MULTI INDICATOR

OWNER'S MANUAL

www.tmteng.com

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

	This is warning & caution mark
	This is hazard alert mark
	This is useful information mark

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1. Precautions

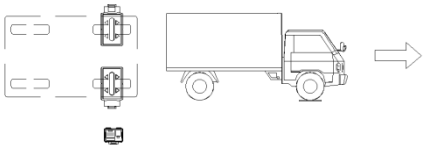
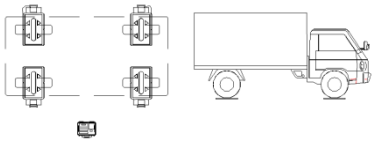
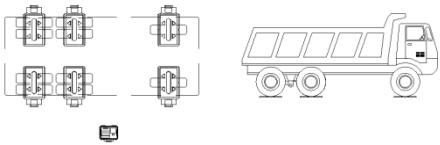
⚠ Please be informed that we're not responsible for any incident or mishap caused by partial modification of this product. To avoid such situation, customers need to contact our customer service team or system installation staff in advance, and any modification should be conducted under our surveillance.

- 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.

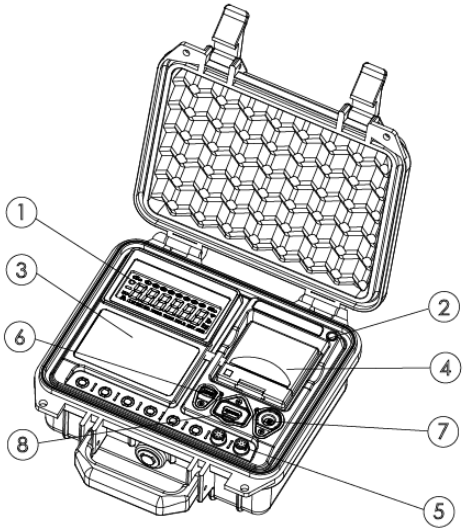
2. Introduction

- Portable & watertight case
- Indicators for measuring axle
- Wireless communication: ZigBee
- Weigh-In-Motion and static weighing mode
- Built in thermal printer
- Memory capacity: 8K vehicles
- Standard RS232C
- Alert for over loaded vehicle
- Long battery lifetime by one time charging
- Optional USB host (For USB memory stick)

3. Installation

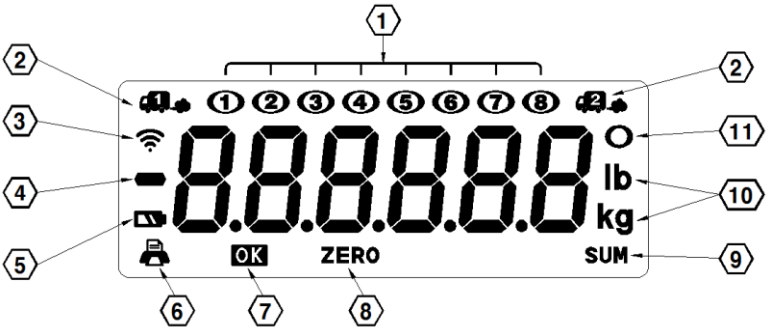
Weighing method	Description
Sequential 2 Axle, 2 Plate Accuracy: ±1~3% (WIM: ±3%) **[Scale ID]** Axle 1☞ Left: 1 / Right: 2	 In case of Weigh-In-Motion (WIM), you must install the dummy pad (longer to the length of the vehicle) back and forth on scale.
Synchronous 2 Axle, 4 Plate Accuracy: ±0.1% **[Scale ID]** Axle 1☞ Left: 1 / Right: 2 Axle 2☞ Left: 3 / Right: 4	
Synchronous 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	 Can be installed up to maximum 8 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 ⓘ Example of display ① (1 scale) ①② (2 scales) ①②③ (3 scales) ①②③④ (4 scales) ①②③④⑤ (5 scales) ①②③④⑤⑥ (6 scales) ①②③④⑤⑥⑦ (7 scales) ①②③④⑤⑥⑦⑧ (8 scales) ① ⑧ (9 scales) ①② ⑧ (10 scales) ①②③ ⑧ (11 scales) ①②③④ ⑧ (12 scales) ①②③④⑤ ⑧ (13 scales) ①②③④⑤⑥ ⑧ (14 scales) ⑦⑧ (15 scales) ① ⑦⑧ (16 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
kg/lb	Use to change weight unit ⚠ The scale's unit is also changes
ZERO	Return the display to zero ⓘ possible while connected to ZAK-06WII and in Power Saving mode
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

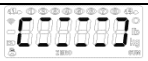
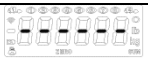
5. Use of Battery Charger

- ◆ 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		Initial display
4		NUMBER → Input the vehicle ID → ↵
5		NUMBER (For 2 seconds) → Input the item code → ↵
6		**1st** axle weighing → Stable lamp → ↵
7		Stored the **1st** axle weight
8		**2nd** axle weighing → Stable lamp → ↵
9	Repeat measures of axle weight (**3th** ,**4th** ,**5rd**, **6th**, **7th**, **8th** , **9th** , **10th**, **11th**)	
10		12th axle(Last axle) weighing → Stable lamp → ↵
11		Stored the **8th** axle weight
12		+ 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.	

ℹ How to check an individual pad weight

Step 1: Press and hold ↵ key for 2 seconds, then "1 – 16" 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

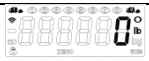
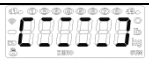
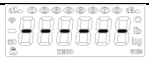
ℹ Undoing the accumulated data

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

If you press 7 PORS key, clears the previous axle weight.

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

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

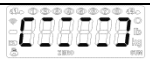
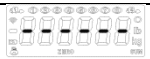
1	Connect scales by wireless	
2	Setting F03-1 and F01-2.	
3		Initial display
4		NUMBER → Input the vehicle ID → ↵
5		NUMBER (For 2 seconds) → Input the item code → ↵
6		**1st** axle weighing (WIM)
7		**2nd** axle weighing (WIM)
8	Repeat measures of axle weight (**3rd**, **4th** ,**5rd**, **6th**, **7th**)	
9		**8th** axle(Last axle) weighing (WIM)
10		+ 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.	

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

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

ⓘ 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		Initial display
4		NUMBER → Input the vehicle ID → ↵
5		NUMBER (For 2 seconds) → Input the item code → ↵
6		Loaded vehicle entry
7		+ 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 – 16" is displayed.

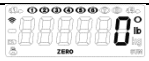
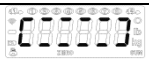
Step 2: Press scale ID number and then press ↵ key.

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'

6.4. Real Time Warning MODE

1	Connect the scales by wireless (Example: 4 scales)	
2	Setting F01-4, F06-2	
3		Initial display
4		NUMBER → Input the vehicle ID → ↵
5	2000 kg	Raise the vehicle is not loaded cargo on the pad.
6	0 kg TARE	Press the kg/lb key to obtaining the TARE weight. At this time, the tare lamp will turn on.
7	1000 kg TARE	The loading of cargo in a vehicle. If you set the excess weight value as 999, warn real time about NET Value.
8	3000 kg SUM	If you press + SUM key, SUM lamp will turn on and displayed gross value.
9	PRINT → Print & Save	
10	Repeat the same procedure for each vehicle to be loaded starting from step 3.	

ℹ How to input the excess value.

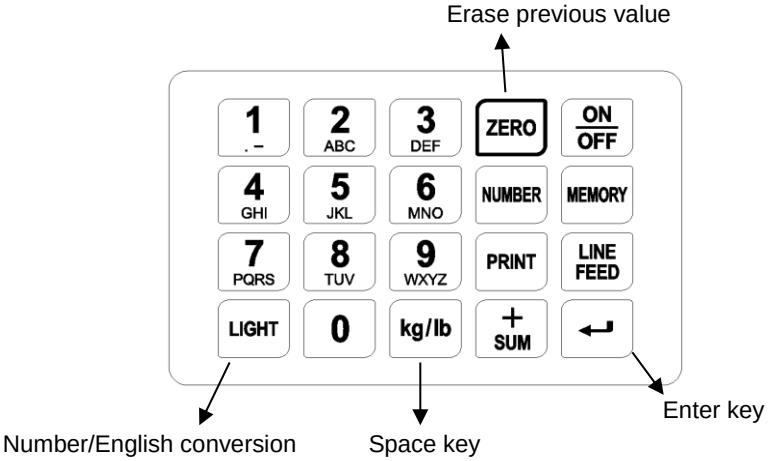
1. When the display is off, press ON/OFF key while long press NUMBER key.
2. Input the Excess value Using 0 ~ 9 WXYZ key.
3. Press ↵ key.
   (max excess value : 65,000kg)

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

7. Alphabet Input

7.1. Input method

English input is similar to the way cellular phone.



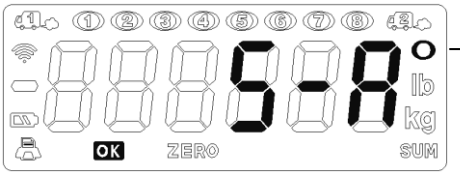
7.2. Input the vehicle ID

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, 0 0 0 0 0 is displayed.

Step2: 5 JKL ☞ LIGHT ☞ 1 . – 1 . – ☞ 2 ABC ☞ ↵



English input wait state

English keypad state

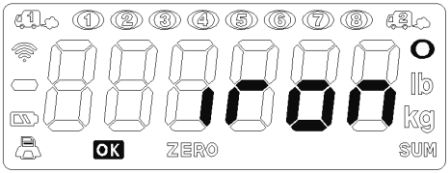
7.3. Input the item code

You can enter up to 10 characters. 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 ☞ 4 GHI 4 GHI 4 GHI ☞ 7 PQRS 7 PQRS 7 PQRS ☞ 6 MNO 6 MNO 6 MNO ☞ 6 MNO 6 MNO ☞ ↵



→ English input wait state

English keypad state

7.4. Input the customer details

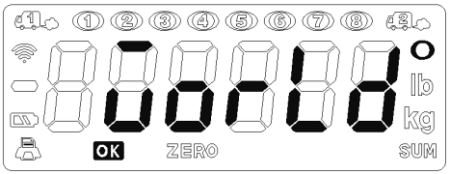
You can enter up to 120 characters.
This data is stored in non-volatile memory, and is not lost even if power is off.

For example (“WE WEIGH THE WORLD”)

Step1: When the indicator is power off press ON/OFF key while pressing PRINT key, “ Ed it” is displayed.

Step2: Press PRINT key again, is displayed.

Step3: LIGHT ☞ 9 WXYZ ☞ 3 DEF 3 DEF ☞ kg/lb ☞ 9 WXYZ ☞ 3 DEF 3 DEF ☞ 4 GHI 4 GHI 4 GHI ☞
4 GHI ☞ 4 GHI 4 GHI ☞ kg/lb ☞ 8 TUV ☞ 4 GHI 4 GHI ☞ 3 DEF 3 DEF ☞ kg/lb ☞
9 WXYZ ☞ 6 MNO 6 MNO 6 MNO ☞ 7 PQRS 7 PQRS 7 PQRS ☞ 5 JKL 5 JKL 5 JKL ☞ 3 DEF ☞ ↵



→ English input wait state

English keypad state

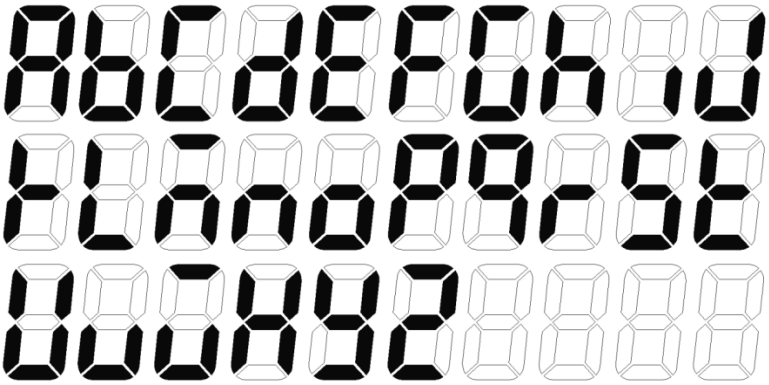
Delete the previous contents

Step1: When the indicator is power off press [ON/OFF] key while pressing [PRINT] key, "Ed it" is displayed.

Step2: Press [ZERO] key, "dELEtE" is displayed and delete the previous contents.

ⓘ Press [↵] key, exit this mode without any additional work.

7.5. The actual display (Alphabetical)



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 [1] to [5] key.

[1] Call the date

1		Input the year and date→ [↵] (October 13th 2014)
2		Press [PRINT] key and execute the send to printer & PC

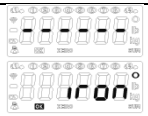
[2] Call the serial number

1		Input the serial number → [↵] (1234)
2		Press [PRINT] key and execute the send to printer & PC

[3] Call the vehicle ID

1		Input the vehicle ID → [↵] (5-A)
2		Press [PRINT] key and execute the send to printer & PC

[4] Call the item code

1		Input the item code → [↵] (IRON)
2		Press [PRINT] key and execute the send to printer & PC

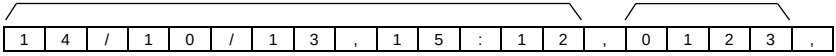
[5] The entire call

1		Press [PRINT] key and execute the send to printer & PC Press [kg/lb] key and execute the send to USB Memory and printer & PC Press [MEMORY] key and execute the send to USB Memory USB Save File : CDxxxxxx.csv (xxxxxx: year(2)month(2)day(2))

8.1. Print form (Please refer to print form of page 30.)

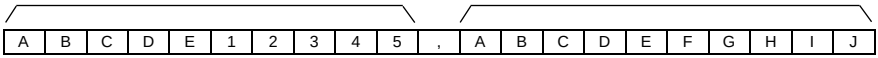
8.2. PC data format

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



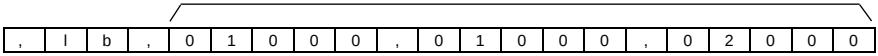
1	4	/	1	0	/	1	3	,	1	5	:	1	2	,	0	1	2	3	,

◊ 21~41 [Vehicle ID] [Item code]



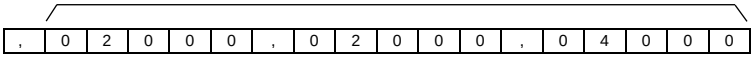
A	B	C	D	E	1	2	3	4	5	,	A	B	C	D	E	F	G	H	I	J

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



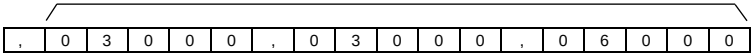
,	l	b	,	0	1	0	0	0	,	0	1	0	0	0	,	0	2	0	0	0

◊ 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]



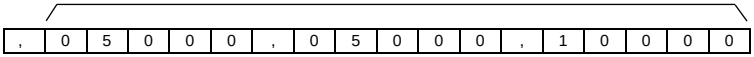
,	0	3	0	0	0	,	0	3	0	0	0	,	0	6	0	0	0

▪

▪

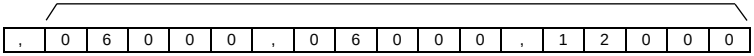
▪

◊ 224~241 [Axle 11 weight: left / right / sum]



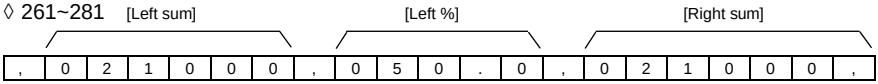
,	0	5	0	0	0	,	0	5	0	0	0	,	1	0	0	0	0

◊ 242~260 [Axle 12 weight: left / right / sum]



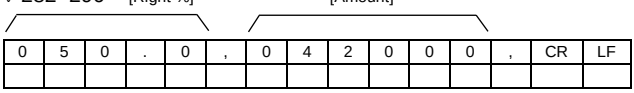
,	0	6	0	0	0	,	0	6	0	0	0	,	1	2	0	0	0

◊ 261~281 [Left sum] [Left %] [Right sum]



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

◊ 282~296 [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.

ⓘ 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 [kg/lb] 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 inE " 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 [ON/OFF] key while pressing the [2 ABC] key.

Step 1. At this time, "F01" is shown on the display after "SEt" message.
At this point, If you press [ZERO] 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 (1~16)

Value	Description
1	1 Scale
2	2 Scales
4	4 Scales
12	12 Scales
16	16 Scales

Ref 1. When F06-2 set, F1 can't be set less than scale 4.(Display Message "Ch-F06")

◊ 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	Manual 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 Enable (0~2) ▶Initial value: 0

Value	Description
0	Not Used
1	Use for print. (+Excess Value) 1. If the overload when printing, warn backlight blink and beep sound. 2. If excess value is 0, do not warning. 3. excess value is decision about total weight value, Net weight value.
2	Use for Real Time Warning. (±Excess Value) 1. printed without warning, excess value. 2. real time warning is backlight blink and beep sound. 3. If excess value is 0, do not warning. 4. excess value is decision about NET weight value. 5. Tare mode available. ([kg/lb] key used) 6. Print format is fixed at 15.5 7. Positive weight only when tare mode available. 8. More than 4 scales.(F01→ Setting value>= 4)

Ref1. How to Input the Excess value

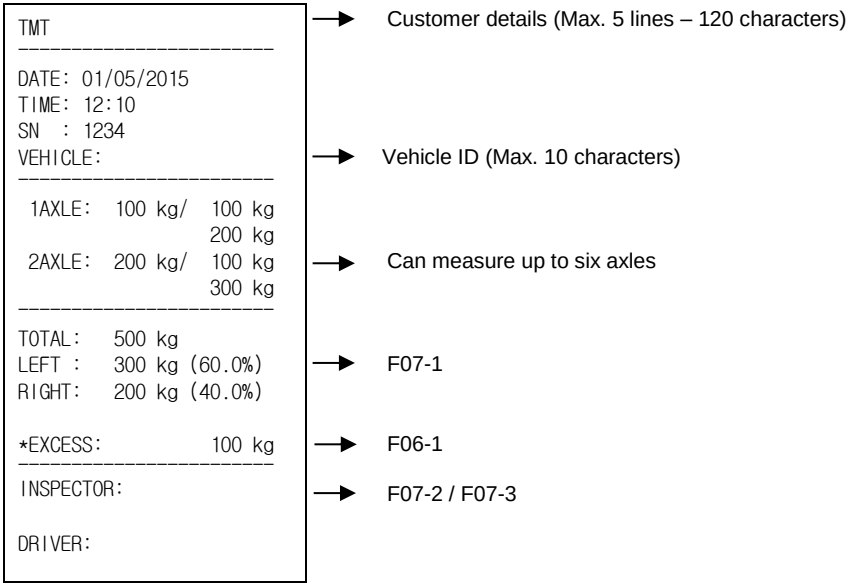
1). When the display is off, press [ON OFF] key while long press [NUMBER] key.

2). Input the Excess value Using [0]~[9 WXYZ] key.

3). Press [↵] key.

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

Value	Description
0	Standard
1	Standard + Left-Right balance
2	Standard + Inspector and Driver
3	Standard + Left-Right balance + Inspector and Driver



◊ 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 (0~5) ▶ Initial value: 2

Value	Description	
0	2400 bps	Only send to RS232C port. Refer to " F12 ".
1	4800 bps	
2	9600 bps	
3	19200 bps	
4	38400 bps	
5	Send to wireless dongle(TF-200).	Only send to the wireless dongle.

◊ 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 (0~3) ▶ 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)

ℹ F14-1: Send a scale data 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 7 ☞ scale 8 ☞ scale 1 ☞ scale 2 ….

ℹ F14-2: Send a scale data 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 7 ☞ scale 8 ☞ Send a sum weight of scales

ℹ 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

ℹ Syncing is not possible while connected to ZAK-06WII and in Power Saving mode.

◊ F18: Auto weighing stable time (0~9) ▶Initial value: 0

Value	Description
0	Not used
5	5 second stable state, the automatic accumulate the weighing
9	9 second stable state, the automatic accumulate the weighing

ⓘ Setting F01-2.

◊ F19: Auto print time (1~9) ▶Initial value: 2

Value	Description
1	If the weight maintains for 3 seconds with less than 100kg , it will be auto print.
5	If the weight maintains for 15 seconds with less than 100kg , it will be auto print.
9	If the weight maintains for 27 seconds with less than 100kg , it will be auto print.

ⓘ Setting F01-2.

F20: Power saving mode Display used (0~1) ▶Initial value: 0

Value	Description
0	Not used
1	Displayed when one or more of the connected pads are in power saving mode.

12. Test Mode

12.1. How to enter

When the display is off, press [ON/OFF] key while pressing the [1] key.

Step 1. At this time, "tEST 1" is shown on the display after "tEST" message.
At this point, If you press [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 [↵] 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 - 16	Pressing the equipment ID of scales, the weight value of the scale is displayed.

◊ TEST 3: Printer test

Display	Description
Print	Print the [PRINT] key is pressed.

◊ TEST 4: Back light test

Display	Description
LIGHt	Turn on the backlight the [LIGHT] key is pressed.

◊ TEST 5: Memory test

Display	Description
mEmorY 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)

◊ TEST 7: LCD TEST

Display	Description
	LCD All Segment ON

◊ TEST 8: USB TEST

Display	Description
USb- in xxxx(COUNT)	USB Memory Data Write TEST (File : TEST.csv) (Enter :50, 1 : 100, 2 : 500, 3 : 1000 Count)

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

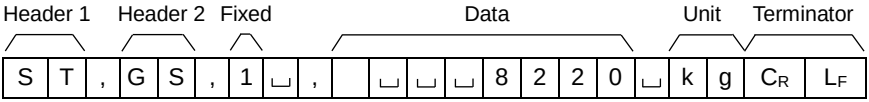
Byte	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Data1	2	4	3	2	0	,	␣	1	,	␣	␣	␣	␣	2	4	4	0	␣	k	g	C_R	L_F
Data2	2	4	3	2	0	,	1	2	,	␣	␣	␣	␣	2	1	6	0	␣	k	g	C_R	L_F
Data3	2	4	3	2	0	,	␣	T	,	␣	␣	␣	␣	8	2	2	0	␣	k	g	C_R	L_F

ⓘ F14-1: Send the weight scale 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 7 ☞ scale 8 ….scale 1 ☞ scale 2 ….

ⓘ F14-2: Send the weight scale 1 ☞ scale 2 ☞ scale 3 ☞ scale 4 ☞ scale 5 ☞ scale 6 ☞ scale 7 ☞ scale 8
☞ Send a sum weight of scales (Scale ID "␣T")

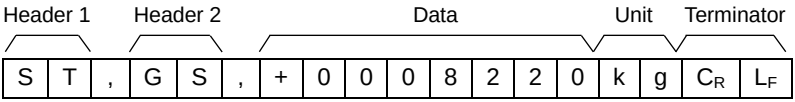
② Setting mode F14-3 ␣

◊ Format 1 (F13-0, 22bytes)



Header 1	ST	Stable weight data (0x53) (0x54)
	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	ST	Stable weight data (0x53) (0x54)
	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, "Ch 04" is displayed.

(Data is written to USB and read and confirmed data recorded
Confirm up to 3 times if the read data is not normal
If the record is not recorded normally more than 3 times, it is judged as an error and the non-normal data is recorded in the file (ERROR.csv))

If a USB data writing error occurs, LO lamp ON is displayed on the display.

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 / 6.4-step9 / 6.5-step9, 6.6-step9) to saves the data in the memory stick.
◊ When save the data to memory stick, RED lamp of USB port is lit.
◊ USB format, omitted the minus sign.
◊ If the pad is an odd number, the first axis is filled with the value of Total only.

ⓘ Example: 20180917.csv or CD180917 (Comma separated value - Excel file format)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Date	Time	Serial No.	Vehicle ID	Item Code	Unit	1 Left	1 Right	1 Total	2 Left	2 Right	2 Total	3 Left	3 Right	3 Total	4 Left	4 Right	4 Total	5 Left	5 Right	5 Total
2	2018-09-17	13:29	4			kg	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020
3	2018-09-17	13:31	5			kg	240	1780	2020	1080	380	1460	1080	380	1460	1080	380	1460	1080	380	1460
4	2018-09-17	14:32	6			kg	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480
5	2018-09-17	16:05	7			kg	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020
6	2018-09-17	16:06	8			kg	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480

	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	6 Left	6 Right	6 Total	7 Left	7 Right	7 Total	8 Left	8 Right	8 Total	9 Left	9 Right	9 Total	10 Left	10 Right	10 Total	11 Left	11 Right	11 Total
2	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020
3	1080	380	1460	1080	380	1460	1080	380	1460	1080	380	1460	1080	380	1460	1080	380	1460
4	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480
5	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020	240	1780	2020
6	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480	1080	400	1480

	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
1	12 Left	12 Right	12 Total	Left Total	Ratio(%)	Right Tota	Ratio(%)	Amount	EXCESS	TARE	NET	GROSS	
2	240	1780	2020	2880	11.8	21360	88.2	24240	24240	0	0	0	
3	1080	380	1460	12120	67	5960	33	18080	18080	0	0	0	
4	1080	400	1480	12960	72.9	4800	27.1	17760	17760	0	0	0	
5	240	1780	2020	2880	11.8	21360	88.2	24240	24240	0	0	0	
6	1080	400	1480	12960	72.9	4800	27.1	17760	17760	0	0	0	

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Date	Time	Serial No.	Vehicle ID	Item Code	Unit	1 Left	1 Right	1 Total	2 Left	2 Right	2 Total	3 Left	3 Right	3 Total	4 Left	4 Right	4 Total	5 Left	5 Right	5 Total
2	2001-02-03	4:05	1	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
3	2001-02-03	4:05	2	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
4	2001-02-03	4:05	3	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
5	2001-02-03	4:05	4	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
6	2001-02-03	4:05	5	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
7	2001-02-03	4:05	6	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
8	2001-02-03	4:05	7	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
9	2001-02-03	4:05	8	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000
10	2001-02-03	4:05	9	123456789	123456789	kg	1000	1000	2000	2000	2000	4000	3000	3000	6000	4000	4000	8000	5000	5000	10000

	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	6 Left	6 Right	6 Total	7 Left	7 Right	7 Total	8 Left	8 Right	8 Total	9 Left	9 Right	9 Total	10 Left	10 Right	10 Total	11 Left	11 Right	11 Total
2	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
3	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
4	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
5	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
6	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
7	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
8	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
9	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000
10	6000	6000	12000	7000	7000	14000	8000	8000	16000	9000	9000	18000	10000	10000	20000	11000	11000	22000

	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY
1	12 Left	12 Right	12 Total	Left Total	Ratio(%)	Right Tota	Ratio(%)	Amount	EXCESS	TARE	NET	GROSS
2	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
3	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
4	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
5	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
6	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
7	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
8	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
9	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234
10	12000	12000	24000	78000	50	78000	50	156000	5678	1234	5678	1234

14.3. Data capacity

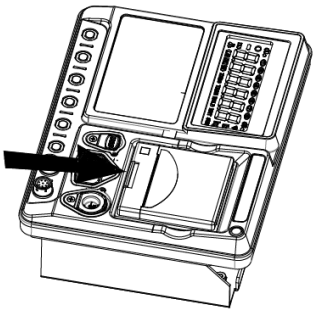
◊ In case of 1G memory stick: Approx. 5,900,000 data

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.

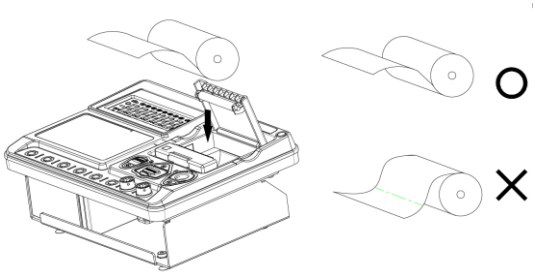
Step 2. Open the paper roll cover by pressing the cover open button.



⚠ Do not open the print cover while the printer is operating.

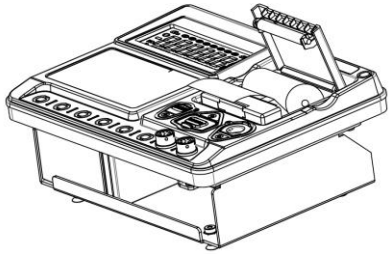
Step 3. Remove the used paper roll core if there is one.

Step 4. Insert the paper roll as shown.



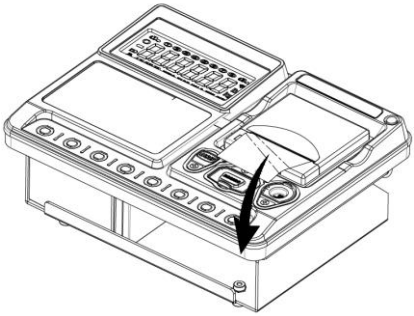
⚠ Be sure to note correct direction that the paper comes off the roll.

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)

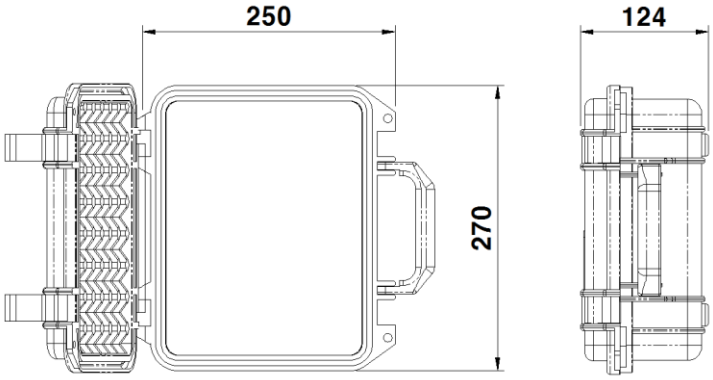
◆ Printer specifications

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.
n.SS	This Message is displayed When F03 is 2 and Left, Right Pad Axle is different. Decision time is the same as the value of F18
CH-FXX	Please check setting(Setting number Fxx). Ex)CH-F06. -> F06
LO	USB Write Error (If 'CH04' occurs, display until power OFF)