

MEMO

TS SERIES

V1.00

WIRELESS CRANE SCALE

Operating Manual



MEMO

1. INTRODUCTION

This Service and Operation Manual are the specifications for our **TS SERIES**.

The **TS SERIES** is the product of years of design, development, and in-field testing.

This **TS SERIES** has been designed with reliability, under rigid quality control and with outstanding performance.

This MANUAL included with basic technical information about composition of hardware and programmatic functions.

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.

- ◆ Don't install the **TS SERIES** in direct sunlight.
- ◆ Avoid sudden temperature changes, vibration, wind, water, or excessive dirt.
- ◆ Avoid from the shock of excessive weight.
- ◆ **TS SERIES** is not water-resistant.
- ◆ Use away from heavy R.F noise.
- ◆ Keep it dry place.
- ◆ Do not stand under the scale while weighing the load, and you should be careful to provide against a safety accident.

■ P03 : Hold speed (1~9)

Setting value	Description
P03-1	Very fast
P03-5	Normal
P03-9	Very slow

■ P04 : Stable condition set of weight (1~9)

Setting value	Description
P04-1	Sensitive
P04-5	Normal
P04-9	Insensitive

■ P05 : Automatic zero condition (00~99)

Setting value	Description
P5-00	No compensation
P5-23	Compensation for gradual change below 1 division for 3 sec.
P5-99	Compensation for gradual change below 4.5 division for 9 sec.

2. MAIN FEATURES









- ◆ Wireless Communication : ZIGBEE
- ◆ Water Proof : IP-65
- ◆ Easy Battery Pack Exchange
- ◆ Interface with Wireless Remote Display and Controller
- ◆ Charger Board : AC Adapter/Battery Charger Input Included

3. TECHNICAL SPECIFICATIONS

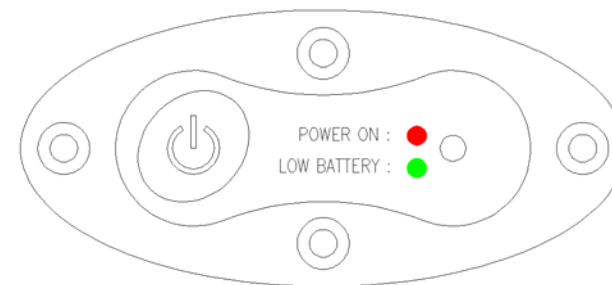
◆ Product specification

MODEL	TS-1T	TS-3T	TS-5T	TS-10T
Capacity	1000kg	3000kg	5000kg	10000kg
Division	0.5kg	1kg	2kg	5kg
Max. Tare Weight	1000kg	3000kg	5000kg	10000kg
Weight	10.5kg	16kg	17kg	36kg
Zero point	Within 2% of maximum weight			
Initial zero bend	Within 10% of maximum weight			
Operating Time	Approx. 90hr			
Temperature	-10℃ ~ 40℃			
Function	Power & Zero key (1key)			
Display lamp	Low Battery (Green), Power On (Red)			
Parts	Battery Pack : 2 EA, Adaptor			
Battery	Lithium Polymer Battery, Charger Input Include			
Battery Spec.	3.7V 4000mA (Size:68x125x12)			
Charge Adaptor	DC 5V, 1A			
Part list	Adaptor, Lithium battery, Manual			


C. Hold function

- ① Auto hold (This function works every time the scale weighs all the things.)
- Under the Zero state, press the  key.
 - The weight display will indicate the  message.
 - Hold sign is displayed.
 - After placing a thing on platform, if the weight change is stable, then a display shows the  message and average weight will appear.
 - The weight of a held thing is displayed.
 - In order to escape from the Auto-Hold function, push the HOLD key under the ZERO state. Then, after the  message will be displayed, the hold sign is off and the scale turns into normal mode.
- ② Manual-Hold Function
(Only when you press a HOLD key, the HOLD function works.)
- Place a thing on hook and press the  key.
The  message appears and the  is displayed.
The Average weight appears.
 - The held weight is displayed.
 - In order to escape from the Manual-Hold function, remove a thing or press the  key. Then, the hold sign is off and the scale returns into the normal mode.





4. DISPLAY AND KEY



◆ Display

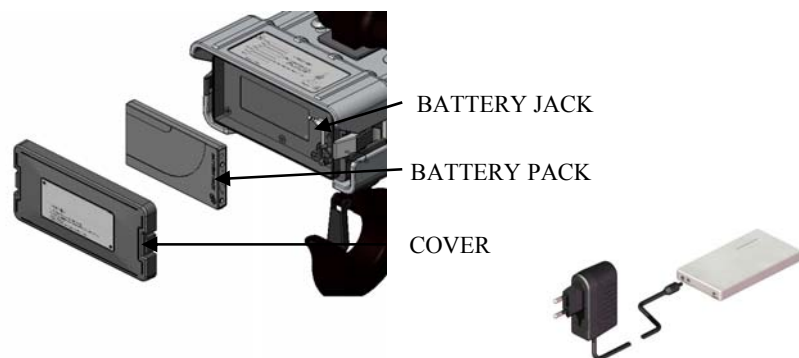
Power on	Red lights up when you press  key
Low battery	Green lights up when low battery

◆ key

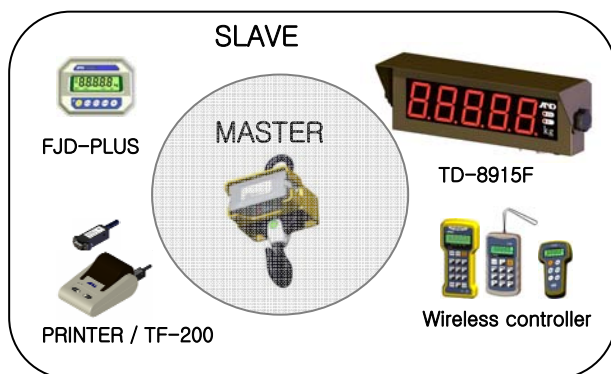
	<ul style="list-style-type: none"> - Power on when you press  key. - If you Press  key for 1 second, power supply goes out. - If you shortly press  key, Reset scale to zero.
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5. USE OF BATTERY CHARGING

- Check the power supply voltage.
- If adaptor is still being charged, the RED lamp is on.
- If a charging is completed, the RED lamp is off.
The battery charging time takes about 6 hr. (The battery charging time is subject to be changed according to battery condition.)



6. WIRELESS DIAGRAM



7. GENERAL FUNCTIONS

(1) MASTER Operating method (TS SERIES)

A. Power on

- Press the key on the front panel of the scale. The scale will be ready for communication & weighing when red lamp is on.
- If you Press key for 1 second, power supply goes out.
 - ☞ Red lamp on : Normal operation
 - ☞ Green lamp on : Low battery sign
 - ☞ Red lamp flicker : Load cell or A/D converter error.

B. Zero function

- If press the key, zero is displayed after correcting zero range by itself. The Zero range is corrected within 2% of maximum weight. If weigh is unstable, the ZERO Key doesn't work.

(2) SLAVE Operating method (AD-8915F / FJD-PLUS / TF-100)

A. Zero function

- If press the key, zero is displayed after correcting zero range by itself. The Zero range is corrected within 2% of maximum weight. If weigh is unstable, the ZERO Key doesn't work.

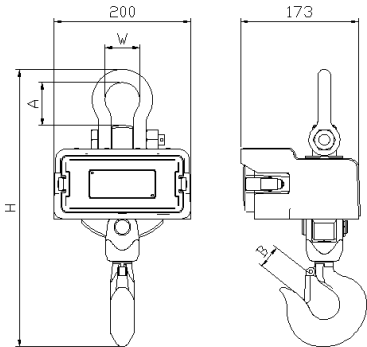
B. Setting function of tare weight

- Place the tare on platform and push the key. Then, the net sign is displayed and the display turns ZERO state.
- In order to delete the tare weight, remove the tare or a thing to be weighted on the platform and press the key. The net sign is off and the scale returns in normal mode. If weight is unstable, key doesn't work. The sum of both a tare weight and a weighing weight cannot be exceeded over the maximum capacity of the scale.

◆ Wireless specification

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(2 nd harmonics)	< -30dBm
Radio link effective range	Approx. 100M (Open space)

◆ Measure & Appearance







MODEL	DIMMENSION			
	H	A	W	B
TS -1T	407	62	51	25
TS -3T	503	73	58	34
TS-5T	525	73	58	40
TS -10T	679	101	83	53




8. SET MODE

☞ Refer to a TF-100 manual when you use the TF-100

(1) How to enter

- When power was turned off, Press the  key for 10 seconds to move to set mode and green lamp is on.
- SLAVE (Auxiliary indicator)
Press the  key with the  key and then press the  key.
The auxiliary indicator switches into set mode.

(2) Keyboard : AD-8915F or FJD-PLUS

- ZERO  : Used to initialize the scale to ZERO.
- HOLD  : Used to increase the setting constant one by one.
- SET  : Used to save the setting constant changed and to move into next setting menu.

(3) Menu (P01 –P05)

- P01 : Speed adjustment function of weight change (1~9)

Setting value	Description
P01-1	Very fast
P01-5	Normal
F01-9	Very slow

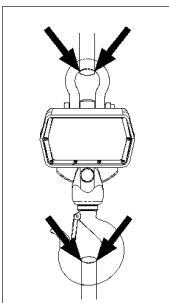
- P02 : Weight backup

Setting value	Description
P02-0	OFF
P02-1	ON

Installation

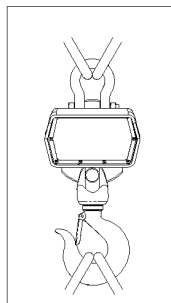
Please check if the safety hook is connected well before you install our **TS SERIES**, so that the SHACKLE is not separated.

DO NOT



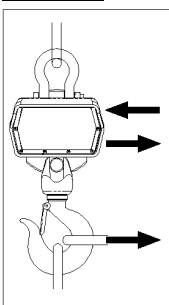
DO NOT INTERFACE HARDWARE (SHACKLES, HOOKS ETC.) THAT ARE OVERSIZED AND RESTRICT SINGLE POINT LOADING AND SELF-ALIGNMENT WHICH CAN RESULT IN OFF-AXIS LOADING

DO NOT



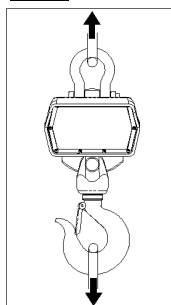
DO NOT USE MULTIPLE ATTACHMENTS

DO NOT



DO NOT PUSH OR PULL ON LOADED SCALE. DO NOT PULL Laterally ON HOOK WITH SCALE LOADED.

DO



USE HARDWARE THAT CREATES SINGLE POINT ATTACHMENTS AND ALLOWS THE SCALE FREEDOM OF ALIGNMENT.

9. ERROR MESSAGE

☞ This message is displayed in slave product (AD-8915F / FJD-PLUS / TF-100)

08.01

Reason

Internal RAM is erased.

☞ Trouble-shooting

Please request A/S to head office.

08.02

Reason

Load cell connection failure or error in A/D conversion part.

☞ Trouble-shooting

Please request A/S to head office.

08.03

Reason

The Zero range exceed from $\pm 10\%$ of Max.

☞ Trouble-shooting

Check that there is nothing on the hook.

00.00

Reason

The display weight is larger than the Maximum capacity you've set.

☞ Trouble-shooting

Don't load the article whose weight is larger than the Max. Capacity on the platform.

This may damage Load Cell.

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