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SECTION 1 INTRODUCTION

1.1 FIGURES

- ◆ 1.2" Large LED display
- ◆ Rechargeable battery operate
- ◆ Selectable reading resolution
- ◆ Charger auto off
- ◆ Battery protection
- ◆ Optional RS-232C communication port and remote controller

1.2 SPECIFICATIONS

Model	Capacity	Division
TM-600A	600kg	0.2kg
TM-1000A	1000kg	0.5kg
TM-1500A	1500kg	0.5kg
TM-2000A	2000kg	1kg
TM-3000A	3000kg	1kg
TM-5000B	5000kg	2kg
TM-7500B	7500kg	2kg
TM-10KB	10000kg	5kg

SECTION 2 KEYBOARD AND DISPLAY

2.1 DESCRIPTION OF KEYS

ON/OFF: power switch, use this key to turn on and turn off scale

CHANGE: division change key, use this key to change division, when in setting mode, use this key to change parameter item

LOCK: reading lock key, use this key to lock reading, when in setting mode, use this key to escape setting, in calibrate mode, use this key to change decimal point.

ZERO: re-zero key, use this key to return zero reading, when in setting mode, use this key to sure setting.

2.2 DISPLAY

LOCK: lock indicator, when this indicator on, scale in reading data lock mode, you can press LOCK key to return normal weighing mode

STABLE: stable indicator, this indicator on mean current reading data is stable, you can read the data, when in calibrate mode, do sure operate after this indicator on.

ZERO: zero indicator, when this indicator on, scale in zero point.

CHARGE: charging LED, see detail at 3.3.

SECTION 3 OPERATION

3. 1 GENERAL INSTRUCTION

1. Please read this manual carefully before you operate the crane scale.
2. When battery goes low, the reading will be flickering automatically. It is the time to charge the battery with the special charger. If **TM** goes on being used without proper charging, the display will flicker, after 30 minutes, **TM** will show "Lo_BA", if you still don't charge the battery, **TM** would be shut down automatically after 5 second of warning in order to protect the battery. Please charge the battery immediately, or **TM** cannot be used.
3. If you will let **TM** crane scale deactivate for a long time, please note you also need change the battery every three months

3. 2 BASIC OPERATION

3. 2. 1 Power on and off

Please press **ON/OFF** key before you operate this scale, and press **ON/OFF** key again after you operate this scale

3. 2. 2 Zero the scale

When there is no item on the scale but reading is not zero, press the **ZERO** key to make re-zero reading.

3. 2. 3 Reading lock

When reading is not stable, you can use **LOCK** key to lock reading, so you can read easily, after you read, press **LOCK** key again to return normal weighing mode.

3. 2. 4 Change division

You can use **CHANGE** key to change division, all scale have been set middle division in the factory.

3. 2. 5 Overload Warning

Please do not add item that is over the maximum capacity. When reading "--OL--", remove the item on the platter to avoid damage to the load cell.

3. 3 CHARGING BATTERY

When battery low, you need charge battery immediately.

To charge the battery simply plug into the mains power. The scale does not need to be turned on.

The battery should be charged for 24 hours for full capacity.

Just under the ZERO indicator there is an LED to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be charged. If the LED is green the battery has a full charge. If it is Red the battery is nearly discharged and yellow indicates the battery is being charged.

As the battery is used it may fail to LOCK a full charge. If the battery life becomes unacceptable then contact your distributor .

3.4 AUTO SLEEP

TM series crane scale have automatic sleep function, (you also can disable this function, see SECTION 5), after scale weight under min capacity (20d) more than setted time, **TM** will automatically enter sleep mode, only the last point will turn on at LED, after you press any key or add weight on hook, **TM** will return normal weighing mode again.

3.5 REMOTE CONTROLLER

TM series crane scale can order optional remote controlled, you can find 4 keys at the remote controller.

Key4: use as **ZERO** key

Key3: use as **CHANGE** key

Key2: use as **LOCK** key

Please pull out the antenna before operate the remote controller

SECTION 4 CALIBRATE

- 1) Turn off the power if you are using the scale.
- 2) Then turn on the power, press **ZERO** key and **CHANGE** key at the same time during selfchecking.
- 3) Display shows "P l---", waiting for input password.
- 4) Input password, use **LOCK** key to move the active digit, use **CHANGE** key to increment a digit, use **ZERO** key to sure, default password is "0000"
- 5) Display will shows "FB CL", press **CHANGE** key until display shows "FB CL"
- 6) Press **ZERO** key to enter calibrate, display shows "ULoAd"
- 7) Empty the hook, after **STABLE** indicator on, press **ZERO** key to sure, after some seconds, zero calibrate completely.
- 8) After zero calibrate, display shows span calibrate mass weight, you can change this weight, (use **LOCK** key to move the active digit, use **CHANGE** key to increment a digit), after input calibrate mass weight, press **ZERO** key to sure, display show "LoAd", add calibrate mass on hook, after stable indicator on, press **ZERO** key again, please wait some seconds, span calibrate completely.

SECTION 5 PARAMETER

5.1 ENTER SETTING MODE

Turn off the power if you are using the scale. then turn on the power, press **ZERO** key and **CHANGE** key at the same time during selfchecking. Display shows “P I---”, waiting for input password, Input password, use **LOCK** key to move the active digit, use **CHANGE** key to increment a digit, use **ZERO** key to sure, default password is “000”, Display will shows “F0 dC”, scale enter setting mode, after enter mode, use **CHANGE** key to shift parameter items, use **ZERO** key to sure, use **LOCK** key to escape current setting item.

5.2 PARAMETER SETTING TABLE

FUNCTION	DESCRIPTION	DEFAULT
F0 dC	Set division 0: hi resolution 1: middle resolution 2: low resolution	1
F1 R2	Set zero tracking range R2n 0: 0.5d, R2n 1: 1d R2n 2: 2d, R2n 3: 4d	R2n 1
F2 bE	Set baud rate (RS-232 is an optional function) 600: 600bps, 1200: 1200bps 2400: 2400bps, 4800: 4800bps 9600: 9600bps	600
F3 SP	Set ADC speed 5 1: 7.5 times/second 5 2: 15 times/second 5 3: 30 times/second 5 4: 60 times/second	5 1
F4 iP	Show internal counts	
F5 Ue	Set weighing unit Unit 0: kg, Unit 1: Unit 2:	0
F6 SL	Set auto sleep mode SLP 0: no auto sleep SLP 1: auto sleep after scale empty for 5 minutes SLP 2: auto sleep after scale empty for 10 minutes SLP 3: auto sleep after scale empty for 20 minutes SLP 4: auto sleep after scale empty for 30 minutes	SLP 1
F7 Grd	Set gravity. Could be set between 0.96 and 1.04	10
F8 C ,	Set new password P I---	000
F9 CL	Calibrate, ULoad→calibrate weight→Load→complete See detail at SECTION 4	

5.3 CHANGE CAPACITY

- 1) Turn off the power if you are using the scale.
- 2) Short J2
- 3) Then turn on the power, press the **CHANGE** and **ZERO** key at the same time when selfchecking. display shows “P3---”, waiting for input password.
- 4) Input password, use **LOCK** key to move the active digit, use **CHANGE** key to increment a digit, use **ZERO** key to sure, default password is “999”
- 5) Display will shows the current capacity, you can use **CHANGE** key to change capacity, after you select, press **ZERO** key to sure.
- 6) Then scale will enter parameter setting mode
- 7) Open J2 jumper

SECTION 6 ERROR CODES

ERROR CODES	DESCRIPTION	RESOLUTION
- - OL -	Over range	Remove weight from the scale. If the problem persist contact your dealer for assistance.
Err 4	Zero Setting Error	The scale was outside the normal auto zero setting range (4% of capacity), please check the hook is empty, or calibrate zero point again.
Err 5	Keyboard Error	Keyboard short, please check the key wire or whether the key have mechanical problem
Err 6	A/D out of range	The values from the A/D converter are outside the normal range. Remove weight from the scale if overloaded, make sure the pan is attached. Indicates the load cell or the electronics may be faulty. If the problem persist contact your dealer for assistance.
Lo BA	Battery low	Charge battery immediately