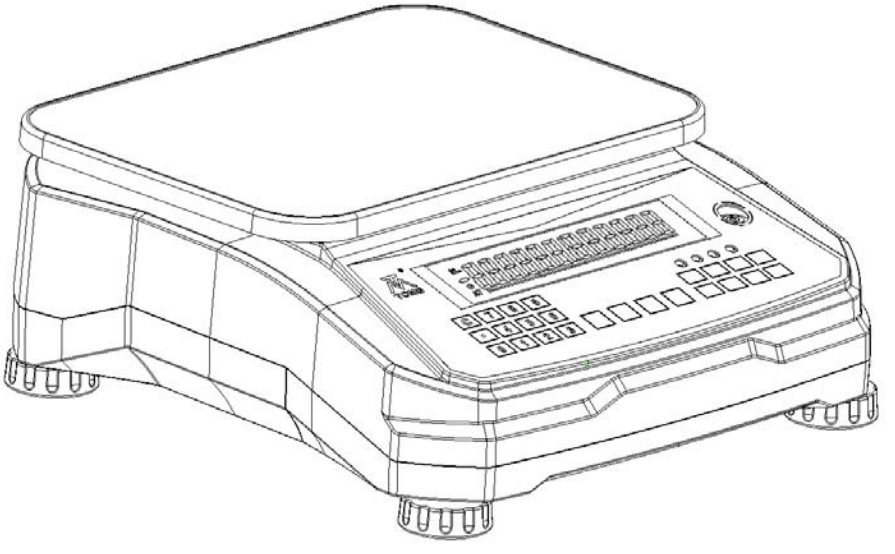
Army Aviation
SWT Series
Electronic Weighing Scale Manual



CONTENTS

【1】 ATTENTION……3

1.1 CONVENTIONAL ATTENTION

1.2 ATTENTION BEFORE USING

【2】 INSTALLATION……4

2.1 BODY INSTALLATION

2.2 BATTERY REPLACEMENT

【3】 INSTRUCTION……6

3.1 PARAMETERS

3.2 POWER SUPPLY

【4】 DISPLAY……6

4.1 PANEL DESCRIPTION

4.2 KEY DESCRIPTION

4.3 DISPLAY DESCRIPTION

【5】 OPERATION ……9

【6】 FUNCTION SETTING……17

【7】 RS232 OUTPUT FORMAT ……22

【8】 ERROR MESSAGES……24

【9】 SPECIFICATIONS……25

【10】WARRANTY……25

First of all, thank you for purchasing the Army Aviation SWT series electronic weighing scale of our company. The high quality and reliability of the product will make you satisfied. By means of the product, you will be able to fully realize the high quality and reliability of our scale, and believe that our product can fully meet your requirements. There are specific methods of installation, operation and maintenance in this manual. In order to apply the scale well , you must read the manual carefully before using.

【1】 ATTENTION

1.1 CONVENTIONAL ATTENTION

- **The object is forbidden to fall down on the pan.**
- **Don’t locate the scale in poor working condition.**
- **Locate the scale in stipulated condition to apply.**
- **Don’t take scale out or move around by pan.**
- **Keep the scale clean if the product will not be used for a long time and recharge the battery once every three months. When applying the product again a long time later, you must recharge the battery at first.**
- **The maintenance must be done by specialist.**

1.2 ATTENTION BEFORE USING

1. Locate the scale on a clean, firm working table with flat surface to keep away from vibration, heat sources, or rapidly changed temperature. Adjust the 4 leveling feet so that the bubble is centered in the circle and be sure the scale is level each time after its location is changed.

2. Connect the AC adapter to the independent power supply for avoiding interference from other equipments.

3. Be sure no loads on the pan when turn scale on.

4. Electrify to preheat the scale for 3-5 minutes before use.

5. For weighing accuracy, the center of gravity of object should be placed in the central area of and beyond the edge of pan.

【2】INSTALLATION

2.1 BODY INSTALLATION

1. Contents in Carton：

No.	Name	Unit	Qty.
1	Body	pc	1
2	Pan	pc	1
3	Manual	pc	1
4	Qualification	pc	1

5	Inner Packing	pc	1
6	AC Adapter	pc	1

2. Locate the scale's body on a firm and horizontal working table with the flat surface , adjust the feet to keep the scale stable and level when the bubble is centered in the circle.

3. Put the pan on the body and press【ON/OFF】key to turn on the scale in weighing interface.

2.2 BATTERY REPLACEMENT

1. Take down the pan, open the housing and disconnect battery joints.

2. Put new battery in the position and connect poles correctly.

Warning：The positive and negative poles of lead-acid battery can not be in short circuit or electrode reverse, which otherwise make the battery damaged and burn.

Connection: Red wire to red pole and black wire to black pole.

3. Screwing the housing and put the pan on again, battery replacement is over.

【3】INSTRUCTION

3.1 PARAMETERS

Accuracy：III

Precision：(3000-300000）d，（3000d,dual range）approved

Working Voltage： 5V

Sample Rate: 20 times/Sec.

Resolution：1 million

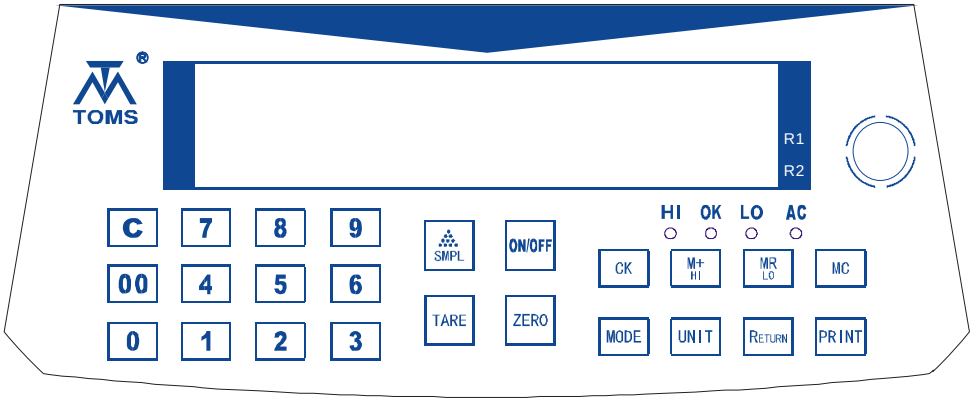
3.2 POWER SUPPLY

AC Adapter：Input 100V~240V，Output 12V/1A

Battery Specification: 6V4AH

【4】DISPLAY

4.1 PANEL DESCRIPTION



SWT Panel

Description：HI(red light),OK(green light) and LO(yellow light) indicates when check weight function works.

4.2 KEY DESCRIPTION

【0~9】:The input digit displays on screen

【 00 】： Input dual 0

【 C 】:Clear the displayed digit on screen

【 0 】： Input 0

【SMPL】:Calculate a new average unit weight（PCS，% unit modes）

【ON/OFF】:Turn on when power off and turn off when power on

【TARE】： Perform Tare Function

【ZERO】： Perform Zeroing Function

【PRINT】： Perform Print Function

【MODE】： Change modes of weight, PCS,%

【CK】: Cooperate with other keys to set the upper-lower limit

【R_{ETURN}】： Return to weighing interface when setting

【M+/HI】： 1. Perform accumulation function in weighing interface, then symbol M+ is bright

2. Cooperate with check weight key to input the upper limit.

【MR/LO】： 1. Perform to redisplay function in weighing interface, then symbol MR is bright.

2. Cooperate with check weight key to input the lower limit.

【MC】：Perform to clear accumulated value.

【UNIT】：In weighing interface, change different units（g，kg，lboz，lb， oz）

Notice:The interval time for pressing key is less than 1 second.

4.3 DISPLAY DESCRIPTION

No.	Description	No.	Description
1	Stable Symbol	7	Auto Tare Symbol
2	Zero Symbol	9	R1 cap. Symbol
3	－ Symbol	10	R2 cap. Symbol
4	NET Symbol		
5	Battery Symbol		
6	Accumulation Symbol		

【5】OPERATION

5.1 TURN ON/OFF

ON：Press 【ON/OFF】key to display the maximum capacity and software version number on screen, do self-inspection, then enter in weighing interface.

OFF：Press【ON/OFF】key to turn off scale directly.

5.2 ACCUMULATED MODE

Perform accumulation function by pressing【M+/HI】key, and accumulative operation can be performed at most 10 times as well as rechecking or print every time.

Notice: The accumulative operation can only be performed when the stable symbol appears, then symbol M+ will be displayed after performing accumulative operation.

1. **Put object on the pan, display the current weighing value.**
2. **Press【M+/HI】key to display "AccCount" in screen for short time, one second later,"1（time）" on screen, another one second later, return in weighing interface.**
3. **The multiple accumulative operation can be performed by the step 2**

5.3 REDISPLAY FUNCTION

The redisplay function can be used to check accumulated results and to examine accumulated messages each time.

1. **After one or more times accumulative operation were performed according to item 5.2**
2. **Press【MR/LO】key to display circularly"Acc-ALL" and " weighing value of accumulative total" on screen. Press the print key to print the value of accumulative total.**
3. **Press continuously【 ZERO 】key to examine each messages of 10 times accumulated results in descending order.**
4. **Press continuously【 TARE 】key to examine each messages of 10 times accumulated results in ascending order.**
5. **Press【R_{ETURN}】key to return in weighing interface.**

5.4 CLEAR ACCUMULATION FUNCTION

Clear Accumulation Function can be used to clear the accumulated results and the accumulated value each time.。

1. **After one or more times accumulated operation were performed according to item 5.2**

2. **Press【MC】key circularly to display“Acc-ALL（times of accumulative total）” and “weighing value of accumulative total”. Press 【MC】key again to clear all the accumulated messages and cancel accumulation operation and symbol M+ disappears.**
3. **Press continuously 【 ZERO 】key to examine each messages of 10 times accumulated results in descending order and press 【 MC 】 key to clear the current accumulated messages.**
4. **Press continuously 【 TARE 】key to examine each messages of 10 times accumulated results in ascending order and press 【 MC 】 key to clear the current accumulated results.**
5. **Press【R_{ETURN}】 key to return in weighing interface.**

5.5 COUNTING MODE

SWT scale has simple counting function.

Notice: When sampling, automatic average unit weight function can be performed to make counting results more accurate.

1. **In weighing interface, press【MODE】key to change in PCS mode.**

2. **Put some samples on the pan and press numeric keys to input the number of samples.**
3. **Press【SMPL】key to sampling.**
4. **Put the other samples to count on the pan and total quantity is displayed.**

5.6 % MODE

SWT scale has % sampling function.

Notice: When sampling, automatic average unit weight function can be performed to make counting results more accurate.

1. **In weighing interface, press【MODE】key to change in % mode.。**
2. **Put samples on the pan and press numeric keys to input the quantity of samples.**
3. **Press【SMPL】key to sampling.**
4. **Put the other samples to count on the pan and total value % is displayed.**

5.7 CHECK WEIGHT SETTING

Check weight function can be set under all kinds of units and modes

Notice: the operation can only be performed when LO is less than HI and more than 9d.

1. **In weighing interface, press 【CK】key to display "CK-SET" on screen.**
2. **Press 【MR/LO】key to display "lower-limit value" on screen and symbol "LO" is displayed，change the lower-limit value by pressing numeric keys, press【SMPL】key to confirm the lower-limit setting.**
3. **Press 【M+/HI】key to display "upper-limit value" on screen and symbol "HI" is displayed, change the upper-limit value by pressing numeric keys, press【SMPL】key to confirm the upper-limit setting.**
4. **Press 【CK】key to return in weighing interface , then check weight function can be performed.**
5. **If perform check weight function after turn off scale, then turn on again, press【CK】key and again to open the function.**
6. **Press【CK】key and press【RETURN】key to close check weight function.**

5.8 SINGLE POINT CALIBRATION(unapproved）

Single Point Calibration can be used to calibrate the deviation of gravity when the scale is used at first or calibrate the scale when it is inaccuracy.

Notice: please calibrate the scale in working condition.

1. **In the condition of power off, hold on 【SMPL】key and press【ON/OFF】 key to enter in function setting and display “ST” on screen .**
2. **Input “1139” by pressing numeric keys and press【SMPL】key to display “C-ZEro” on screen.**
3. **Confirm no load on the pan and press【TARE】key to perform zero calibration ,display “value of weight to load” on screen.**
4. **If “value of weight to load” need be changed, respectively press【TARE】【ZERO】keys to change the value of weight to load.**
5. **Put required weights on the pan for 3-5 seconds and press【SMPL】 key to display “PASS”, and take down the weights, press【SMPL】key again to return in function setting interface.**
6. **Press【 R_{ETURN} 】key to count backwards to return in weighing interface.**

5.9 UNIT SETTING（unapproved）

In general, the units need not reset because they were already set before delivery. If setting need, the steps are shown as the followings, units –g.kg,1b,oz

Notice: The units kg and g are only allowed by rules to be legal measure unit.

1. **In the condition of power off, hold on 【SMPL】key and press【ON/OFF】key to enter in function setting interface, display “ST” on screen.**
2. **Input“1132” by numeric key, and press【SMPL】key to display “uS-on unit” on screen.**
3. **Press【UNIT】key to change the different units, press 【TARE】key to open or close certain unit.**
4. **Press【SMPL】key to return in function setting interface.**
5. **Press【R_{ETURN}】key to count backwards again to return in weighing interface.**

5.10 MINIMUM ZERO DISPALY SETTING

Minimum Zero Display need not reset in general and was set before delivery, if need, the steps are shown as the followings:

Notice: Minimum Zero Display "0" is only allowed to be set on rules.

1. **In the condition of power off, hold on【SMPL】key and press 【ON/OFF】key to open function setting ,display "ST" on screen.**
2. **Input"1136" by numeric keys and press【SMPL】key to display "AZ-d0-" on screen.**

3. Press【1】key to change the different minimum zero display (d0-d1-d2-d3-d4-d5), and select the required one, then press 【SMPL】key to return in function setting interface.

4. Press【R_{ETURN}】key to count backwards, and return in weighing interface.

5.11 LINEAR CALIBRATION（unapproved）

There are three portions for linear calibration in the range of scale capacity. The incorrect linear calibration method will make errors so that the measured value will be influenced each time. Therefore, the linear calibration done by user are not suggested. The linear calibration was done before delivery.

Notice: please calibrate the scale in working condition.

1. **In the condition of power off, hold on【TARE】key and press 【ON/OFF】key to enter in linear calibration interface, and display “C-ZEro” on screen.**
2. **Confirm no load on the pan, press【TARE】key to do zero calibration, display “1/3 maximum capacity” on screen.**
3. **Put the required weights on the pan for 3-5 seconds, press 【TARE】key to enter in next portion linear calibration interface, display “2/3 maximum capacity” on screen.**
4. **Put the required weights on the pan for 3-5 seconds, press 【TARE】key to enter in next portion linear calibration interface, display “3/3 maximum capacity” on screen.**
5. **Put the required weights on the pan for 3-5 seconds, press 【TARE】key to display “PASS” on screen.**
6. **Press【TARE】key to count backwards to return in weighing interface.**

【6】FUNCTION SETTING

In the condition of power off, hold on【ZERO】key and press 【ON/OFF】key to enter in function setting interface and display “FunSET” on screen.

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6.0 BACKLIGHT SETTING

Press【0】key to display “0-Auto ” on screen. Press【0】key to change backlight type.

“0- OFF”： No Backlight

“0- ON”： Backlight is bright

“0- Auto”: Automatic Backlight（No load, no backlight，as load greater than 9d，backlight is bright）

6.1 ANTI-VIBRATION SETTING

Press【1】key to display“1 -F3-” on screen.

Press 【1】 key to change（F1-F5）anti-vibration level. The bigger the number is, the more anti-vibration it is.

6.2 BAUD RATE SETTING

Press【2】key to display “ZB 9600”on screen.

Press 【 2 】key to change the different baud rate（9600-19200-4800）

6.3 CHECK WEIGHT BUZZER SETTING

Press【3】key to display“3-b on”on screen.

Press【3】key to change“ON or OFF” to open or close buzzer when check weight works.

6.4 CHECK WEIGHT ALARM RANGE SETTING

Press【4】key to display“4-C un” on screen.

Press【4】key to change them.

“in”： Regular range alarm（Green light）

“un”： under lower-limit and over upper-limit alarm（Yellow light, red light）

“Hi”： over upper-limit alarm（red light）

“Lo”： under lower-limit alarm（yellow light）

6.5 PRINT MODE SETTING

Press【5】key to display “5-PrPr”on screen.

Press【5】key to change them.

“PrPr”： press【PRINT】key to print

“PrCo”： continuous output to print

“PrST”： stable output to print

“PrPrM”： accumulated output to print

6.6 EXTERNAL DEVICE SETTING

Press【6】key to display “6-K.P205”on screen.

Press【6】key to change them.

“K.P205”： connect to K.P205 printer

“PC”： connect to computer

“SH”： connect to micro printer

6.7 AUTOMATIC TARE SETTING

Notice:approve modes not have this function.

Press【7】key to display “7- At no”on screen.

Press【7】key to change them.

“no”：close automatic tare function

“yes”：open automatic tare function（greater than 2%MAX）

6.8 RS232 OUTPUT SETTING 1

Press【8】key to display “8- PrGn”on screen.

Press【8】key to change them.

“PrGn”：output gross weight, net weight and tare weight

“nPGn”：only output current weight displayed

6.9 RS232 OUTPUT ACCUMULATED SETTING

Press【9】key to display “9-PrAc”on screen.

Press【9】key to change them.

Notice: the print mode on item 6.5 should be set “PrPrM” mode

“PrAc”： In weighing interface, press 【M+/HI】 key to print each accumulated result, press【MR/LO】key to display total accumulated messages and press【PRINT】key to print total accumulated messages.

“nPAc”：In weighing interface, press【M+/HI】key not to print each accumulated result, and press directly【MR/LO】key to display total accumulated messages and press 【PRINT】 key to print total accumulated messages.

6.10 UNIT SETTING

Press【00】key to display“b-Po u g”on screen.

Press【00】key to change the units“g-kg-lboz-lb-oz”

Notice: The unit to change is decided by whether or not function setting(item 5.9) is open.

The changed unit will display on screen when turn on.

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Set the above function on demand, then press【SMPL】key to count backwards to return in weighing interface.

【7】RS232 OUTPUT FORMAT

7.1 RS232 CONNECTION

DB9 joint is for the connection with other communication equipments

Connect pins are assigned as the followings:

PIN2=TXD，PIN3=RXD，PIN5=GND

Setting Pattern:

Data bits 8, without odd-even check, stop bit 1, baud rate is adjustable

Two-way communication mode（set print mode“5-PrPr”according to item 6.5）

When computer transfers“Z”to scale, the function is to press 【ZERO】key.

When computer transfers “T” to scale, the function is to press 【TARE】key.

When computer transfers “R” to scale, the function is to press【PRINT】key.

7.2 RS232 FORMAT

There are three print formats-Continuous, pressing key and stable ：

G.W: 92.6 g	**G.W –Gross Weight**
N.W: 82g	**N.W- Unit Weight**
T.W: 10.6 g	**T.W –Net Weight**

Accumulated Print Format:

No.01	**The first accumulated messages**
G.W:+ 0.3 kg	
No.02	**The second accumulated messages**
G.W:+ 0.2 kg	
No.03	**The third accumulated messages**
G.W:+ 0.3 kg	
TOTAL03	**Accumulative total**
G.W: 0.8 kg	

【8】ERROR MESSAGES

Symptom	Possible Reason	Solution
Unable to boot	No power or dead battery	Check power and battery connection
Can't be calibrated	Hostile working condition Unsuitable weight	Working condition Suitable weight
OV-LoAd	Exceed maximum capacity+9d	Lessen objects
LOW-BAT	Dead battery	Charge battery
Battery symbol	Battery is low	Charge battery
P2-Err	Exceed 20% max. capacity	Take down the load
AC-Err	The accumulated times exceed 10 .	Clear the accumu-lated times
Not Zeroing	Hostile working condition Touch the pan Load cell damaged or PCB problem	Working condition Eliminate objects Repair in factory
System halted	Can't power off, key no response, can't weigh, etc	Power and battery cut,reconnect them to turn on

【9】SPECIFICATIONS

Common Specifications:

Capacity	3kg	6kg
Division	0.05/0.1/0.2/0.5/1g	0.1/0.2/0.5/1/2g
Capacity	15kg	30kg
Division	0.2/0.5/1/2/5g	0.5/1/2/5/10g

Precision Specifications (on demand)

Capacity	3kg	6kg
Division	0.01g	0.05g
Capacity	15kg	30kg
Division	0.1g	0.1g

【10】WARRANTY

Thank you for using our products. We shall supply good service after sales and solve your problem in time in the future.

During one year warranty period, repair or at it option, replace any component(s) that proves to be defective at no charge exclude the artificial damage, in the meantime you must show the invoice and valid warranty card of product to our service center.

In the following situation, you must pay for the item:

1.The artificial damage

2.The damage by nature and man made disaster

3.The user's own disassembly or the other unauthorized man's maintenance

4.The battery is consumable to not be in the scope of warranty

Version：VER-1.0

Subject to change without prior noticea