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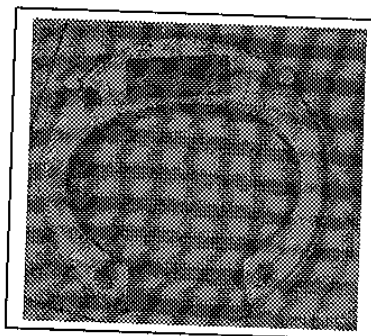
**CONFIDENTIAL****JingLiang Electronics (ShenZhen) Co., Ltd.**

Product Specification for Electronic Bathroom Scale

Model Name: TH400 Body fat (KG/LB)

Documents No.: 602

DOCUMENT No.: 602  
REVISION: 1  
EFFECTIVE DATE: 2004.11.03  
REVISION DATE: 2004.11.03



Product Description: TH400 Body fat

Prepared By: John He	Checked By:	Approved By:
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Rev.	ECN#	Description	By	Date

DISTRIBUTION: ENG(C), RDL, RDL/QA

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**1.0 UNIT DESCRIPTION****1.1 General Description**

This is a convertible (metric/imperial units) electronic scale with LCD digital readout for weight, body fat and body water measurement featured with temperature detecting.

**1.2 Operating Conditions:**

Conduct all measurements with charged battery.

1.3.1 Temperature operating range:  $25^{\circ}\text{C} \pm 14^{\circ}\text{C}$

1.3.2 Humidity operating range: 20% to 95%

1.3.3 Storage temperature:  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

1.3 Net Weight: about 3.0kg

1.4 Scale Size: Dia356x48mm

**1.5 Features:****Technical Parameters:**

- Capacity: 0 to 150Kg / 0 to 330Lb
- Operation Range: 10 to 150Kg / 20 to 330Lb
- Resolution:
  - Weight: 0.1Kg / 0.2Lb
  - Body Fat: 0.1%
  - Body Water: 0.1%
- Accuracy:
  - Weight:  $\pm(1\% + 0.1\text{kg}/0.2\text{lb})$
  - Body Fat:  $\pm 1\%$
  - Body Water:  $\pm 1\%$
- Display: 1.5" digit LCD, reflective/positive. Visual size: 41.1 x 92mm. Digit height: 37.1mm.
- Sensitivity/Memory:  $\pm 1\text{Lb}/0.5\text{Kg}$
- Repeatability:
  - Weight:  $\pm 0.3\text{Kg} / \pm 0.6\text{Lb}$  on two successive readings,
  - Body Fat:  $\pm 1\%$
  - Body Water:  $\pm 1\%$
- Off Center Accuracy: The reading difference between the off-center reading and the center reading should be less or equal to 1% Loading weight.
- Switch activation force: 2.5-15 lb
- Power requirement:
  - Scale Base:
    - 4PCS AAA replaceable batteries
    - Battery life: Est. 3 years at 5 operations per day.
    - Low Battery Warning: "S Lo" shows at about 4.8 volt.
  - Hand Remote
    - 4PCS AAA replaceable batteries.
    - Battery life: Est. 1 years at 5 operations per day.
    - Low Battery Warning: "H Lo" shows at about 4.0 volt.
  - Temperature detector
    - 3PCS AAA replaceable batteries.
    - Battery life: Est. 2 years.
    - Low Battery Warning: "T Lo" shows at about 3.6 volt.
- ESD: contact discharge at  $\pm 4\text{Kv}$  and air discharge at  $\pm 8\text{Kv}$

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**Related Functions:**

- Body Fat function: Y (4 users)
- Automatic Zero Tare: Y
- Auto Shut Off: Y
- Convertible control: LB/ KG
- Weighing mechanism: 4 metal Load Cells
- 5Hard Plastic Buttons (SET, UP, DOWN, USER and CLOCK buttons)
- ITO electrodes
- Platform: Tempered glass platform
- Overload Indication: Err

**2 Cosmetic Requirements:**

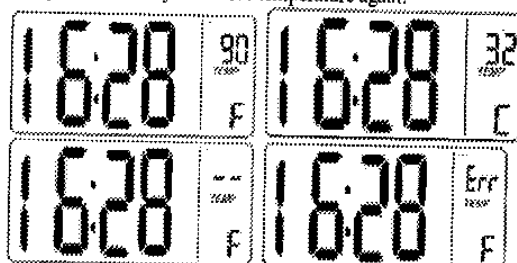
Part Name	Material	Color	Texture	Remark
Top cover	ABS	Pantone 877c	Polished	Silkscreen logo
Bottom cover	ABS	Pantone 877c	Polished	
Plastic Button	ABS	Pantone 877c	Polished	Silkscreen logo
LCD top housing	ABS	Pantone 877c	Polished	Silkscreen logo
LCD bottom housing	ABS	Pantone 877c	Polished	
LCD lens	PMMA	Clear	Polished	
Battery door left	ABS	Pantone 877c	Polished	
Battery door right	ABS	Pantone 877c	Polished	
Contact cap top	ABS	Pantone 877c	Polished	
Contact cap bottom	ABS	Pantone 877c	Polished	
foot	PP	black	/	
LCD		White background with black digits		1.5"

**3. Scale Performance:**

Keys: Set key, up and down, clock and user key. Keys and display are in the hand held remote

**Clock and Temperature:**

When battery is installed in the scale and time is not set, display shows 12:00. Time and temperature is always shown on the display if battery is working in the scale. Temperature displays in Fahrenheit or Celsius when convertible switch is set to lb or kg. Symbol “-” means scale is receiving temperature; “Err” means scale has failed receiving temperature. In this case, press down key to receive temperature again.



To switch the time system between 12 hours and 24 hours (factory set to 12 hour clock)

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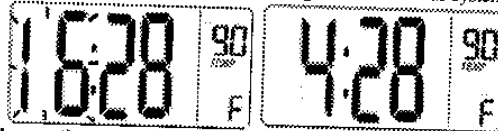
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- In clock mode, time is displayed e.g. 16:28. Press clock key, hour digits start to flash.
- Press clock key. Time has been changed from 24-hour system to 12-hour system to change e.g. 16:28 to 4:28.



To change the time

- In clock mode, time is displayed e.g. 16:28. Press clock key.
- First 2 digits on the left of the display that represent the hour start to flash. Press up or down to change the hour and press set key to confirm.



- The last 2 digits on the right of the display that represent the minute start to flash. Press up or down to change the minute and press set key to confirm.



- Time setting is complete, new time is shown on the display.

**Code Communication:**

Please do this every time when you remove or replace the battery in the scale base.

1. Removed the battery from the scale unit.
2. With batteries installed in the remote unit, press up key. "Code" appears on the display and flashes.
3. Install battery in the scale unit. Scale unit starts to communicate with the remote unit. "Code" is still flashing.
4. "Code" becomes stable and stays for about 3 seconds and then display returns to clock mode. Code communication is complete. If "code" did not become stable and stay for about 3 seconds before display returns to clock mode, start from procedure 1) again.

**3.1 Weight Measurement Only**

- Operate the scale on a secure flat floor.
- Choose pounds (lb), kilograms (kg) by switching the convertible switch  
Note: switch should be factory-set to lb
- In clock mode, press set key. All digits appear on the display.
  - Tap on the scale and wait until "0.0" appears.

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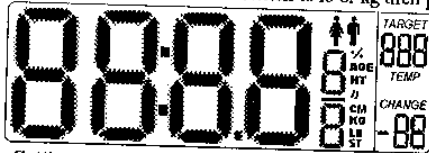
- Step on the scale and stand still.
- Weight reading appears and stays for 10 seconds.
- Scale returns to clock mode

**3.2 Setting Data for Body Fat Measurement:****Note:**

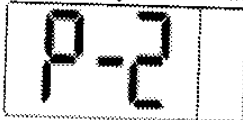
In the data-setting mode, if no key is entered in 30 seconds, scale enters clock mode.

**3.2.1 Start Up**

In clock mode, set the convertible switch to lb or kg then press set key, all digits are lit on LCD screen.

**3.2.2 User Setting**

Press user key to select a user, each time user is pressed, a user number "P-1" or "P-2", "P-3", "P-4" flashes.



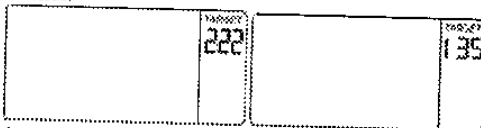
- If wrong user number is pressed accidentally, override by pressing correct user number.
- If the user number is used and has entered data, display will flash "dAtA". Press set to overwrite the user or press another user key.



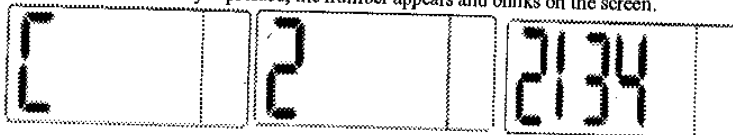
Press set key confirm the user number, and then user number becomes stable. Scale enters target setting mode in 2 seconds.

**3.2.3 Target Setting**

Default target weight (150lbs or 68kg) appears. Press up or down key to scroll to a desired goal weight. Press and hold up/down key to advance the numbers fast. Press set to save the goal weight setting. Scale enters code setting mode in 2 seconds.

**3.2.4 Pass Code Setting**

"C" flashes. Press keys that marked as 1, 2, 3, 4 to enter 4-digit pass code or press set key to override pass code setting. Each time a number key is pressed, the number appears and blinks on the screen.



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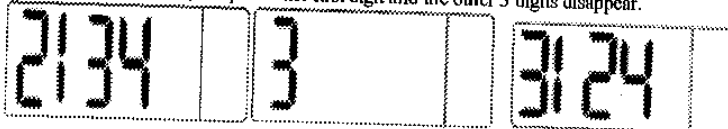
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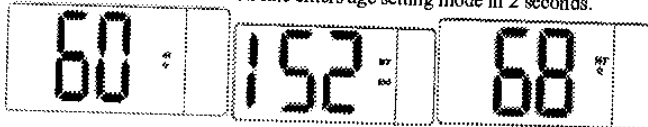
To change a wrong or an unwanted code, re-enter the 4-digit-code after the 4<sup>th</sup> digit of the wrong code is entered. The fifth number is entered, it replaces the first digit and the other 3 digits disappear.



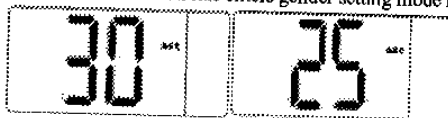
Press set key to accept 4-digit code. Pass code becomes stable. Scale enters height setting mode in 2 seconds.

**3.2.5 Height Setting**

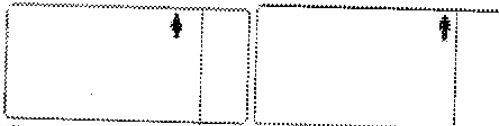
Height indicator "HT" and inch or cm symbol light up (if switch set to lb, default is height in inches, if switch set to KG, default is height in cm). Default height flashes (60 inches or 152 cm). Press up or down to correct the height. Pressing and holding either the "up" or the "down" arrow will advance numbers quickly. Press set to accept the height. Height number becomes stable. Scale enters age setting mode in 2 seconds.

**3.2.6 Age Setting**

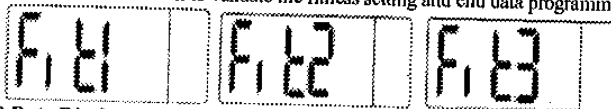
"AGE" appears and default age 30 flashes. Press up or down to correct the age and press set to confirm. Age number becomes stable. Scale enters gender setting mode in 2 seconds.

**3.2.7 Gender Setting**

Default female gender icon flashes. Press up or down to choose between male and female gender. Press set to confirm. Gender becomes stable.

**3.2.8 Set Fitness 1, 2, 3 (See Definition of Fitness 1, 2, 3 herein)**

- Press set to validate gender and enter Fitness Setting.
- Press up or down key to select fitness 1, fitness 2 or fitness 3
- Press set button to validate the fitness setting and end data programming.

**3.2.9 Data Display**

Once fitness is set, data setting for body fat setting is complete and each stored data automatically runs on the screen for 2 seconds in setting sequence: user number, target weight, pass code, height, age, gender and fitness. Scale goes to clock mode. Before scale goes to clock mode, press Set key to skip the display sequence or press user key to go through the whole setting procedure and change the data.

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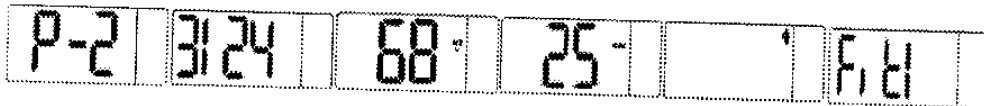
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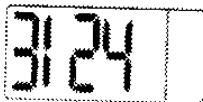
**3.4 Body Fat Measurements and Weight Tracking****3.4.1 Start up and Select User**

In clock mode, select KG or LB by switching the kg/lb switch (factory set to LB), press the user key to select the correct user number. Keep pressing the user key until the correct user number appears. User number appears (i.e. P-2) on the screen and blinks 3 times.

**3.4.2 Enter Pass Code**

If pass code is previously set, "C" appears and blinks until the correct 4-digit code is entered. Enter 4-digit code within 30 seconds; the correctly entered code becomes stable.

- If incorrect code is entered, display will show Err for one second and then go back to blinking C. user can re-enter correct code.
- If user has forgotten the code, user can hold user number for 3 seconds after "C" appears, pass code will show for 2 seconds, then display goes to "0.0".



If no code is previously set or after the correct code is entered, display goes to "tAP".

**3.4.3 Weighing**

Tap the scale and wait until "0.0" appears.

**3.4.4 Current Weight, Target and Change**

Stand on the scale and stay still. Current weight, Target, and Change and displays for 4 seconds.

**3.4.5 Body Fat in lbs or kg (factory settable)**

"bF" and "LB" or "KG" blinks and shows for 2 seconds and blinks followed with body fat weight for 4 seconds;

**3.4.6 Body Fat Rate**

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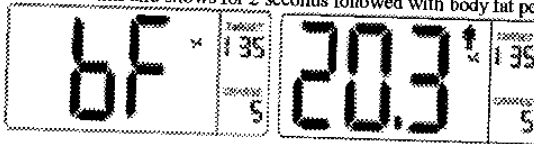
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"bF %" blinks and shows for 2 seconds followed with body fat percentage for 4 seconds, then

**3.4.7 Body Water Rate**

"H2O" shows for 2 seconds followed with body water percentage for 4 seconds.

**3.4.9 Repeat Body Fat Sequence**

To review target, change, body fat and body water again, press set key within 4 seconds after body water appears. Scale enters clock mode in 4 seconds after body water appears.

**Definition of Fitness1, 2, 3:**

**Fitness 1:** This is the normal mode and represents the first mode selected by the user at the start of a training/diet program.

- Fitness 1 corresponds to a level of activity, fitness, diet and overall personal well being that corresponds to a person with a relatively low level of activity.
- Physical Activity is limited, less than 2 times per week
- Less than 20 minutes per activity
- Low level aerobics

Fitness mode 1 should be used for a period of approximately 6-10 weeks as the user progresses through their program of diet/exercise. It should be used by "Normal" people at all times.

**Fitness 2:**

Fitness mode 2 should be used as the user progresses through their exercise/diet regime at a time when the benefits of an improved overall wellness and fitness are achieved.

•Moderate Daily Exercise: 20 minute workouts, 5 times per week. (Intensity and Strength at a low level as compared to Fitness Mode 3)

- Cycling
- Jogging
- Brisk Walking
- Raking Leaves
- Tennis
- Aerobics

After a period of approximately 8-12 weeks of continued exercise/diet programs the user may advance to the next Fitness level: Fitness 3.

**Fitness 3:** Fitness 3 is a highly active individual with a healthy diet that has developed a range of flexibility, endurance and strength over an extended period of time. A typical daily workout would include the items listed below and would take place 5 or more times per week.

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•**WARMUP** - 5-10 minutes of exercise such as walking, slow jogging, knee lifts, arm circles or trunk rotations. Low intensity movements that simulate movements to be used in the activity can also be included in the warmup. •**MUSCULAR STRENGTH** - a minimum of two 20-minute sessions per week that include exercises for all the major muscle groups. Lifting weights is the most effective way to increase strength. •**MUSCULAR ENDURANCE** - at least three 30-minute sessions each week that include exercises such as calisthenics, pushups, situps, pullups, and weight training for all the major muscle groups. •**CARDIORESPIRATORY ENDURANCE** - at least three 20-minute bouts of continuous aerobic (activity requiring oxygen) rhythmic exercise each week. Popular aerobic conditioning activities include brisk walking, jogging, swimming, cycling, rope-jumping, rowing, cross-country skiing, and some continuous action games like racquetball and handball. •**FLEXIBILITY** - 10-12 minutes of daily stretching exercises performed slowly, without a bouncing motion. This can be included after a warmup or during a cooldown. •**COOL DOWN** - a minimum of 5-10 minutes of slow walking, low-level exercise, combined with stretching.

**Fitness Summary & Overall Time Line**

- Starting From Fitness Mode 1 (Normal) Utilize this mode for less active lifestyles, and also for the initial phases of a diet/exercise program.
- After 6-10 weeks of a moderate Diet/Exercise Regime: Select Fitness Mode 2 and remain in this mode while you progress through your program.
- After 6 months of Controlled Diet/Exercise Regime: Select Fitness Mode 3

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