WR101 WEIGHING INDICATOR

OPERATION MANUAL

Platform Scale
Truck Scale
Animal Weighing Scale
Counting Scale
Wireless Scale

2017 / 03
Rev 1.05

CAUTION!

Do not use ID226 in hazardous areas!

Our product range includes special devices for hazardous areas

CAUTION!

Electric shock hazard!

Always unplug power cord before performing any work on the weighing terminal.

DANGER!

Hazard of electric shock if the power cable is damaged!

Check the power cable for damage regularly. Unplug the power cord immediately if the power cable is damaged.

Maintain a clearance of at least 3 cm on the rear side of the weighing terminal in order to prevent the power cable from bending too much.

CAUTION!

Do not open the weighing terminal!

The warranty is void if this stipulation is ignored. The weighing terminal may only be opened by authorized persons.

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Change Log

Version	Change	Date
V1.00	1st Version	2013/11
V1.01	Add 5(Continuous print out) for F4.1	2015/03/01
V1.02	Add SICS commands in serial port	2015/05/17
V1.03	F4.1 add same to IND221 assignment	2015/07/04
V1.04	Add F9(Ethernet Optional)	2015/11/21
V1.05	Add label printer supported	2016/10/25

Terminal Configuration Guide

WR101 Configurator						
	Housing	**Hardware**	**Battery**	**Printer**	**Language**	**Display**
WR101	**X**	**X**	**X**	**X**	**X**	**X**
WR101	0-SS Desk 1-SS SLIM, Wall Housing 2-SS SLIM, Round Housing 3-Plastic Desk 4-SS-2 Desk 5-SS-2 Round Pole Housing 6-SS-2 Wall Housing	0-RS232+RS485 X 1 1-RS232+RS485+Relay 2-RS232+RS485+RTC 3-RS232+RS485+RTC+Relay T-RS232+RS485+LAN W-RS232+RS485+WIFI Y-RS232+RS485 +BlueTooth U-RS232+RS485+LAN+Relay V-RS232+RS485+WIFI+Relay X-RS232+RS485+BlueTooth	0 - None 1 - Nl-MH battery 2 - Lead-Acid battery	0- None	0- Chinese 1- English	0 - Red 1 - Green

SS Desk housing

Slim Body

Plastic Body

SS -2 Desk & Wall housing & Round Pole housing

1 Introduction

1.1 Overview

- 6 bit 33.4mm high, Red or Green LED segment display
- 5 function keys and one ON/OFF power control key
- Stainless steel enclosure with IP66 protection
- 5VDC ADC exciting output
- Support One analog scale with up to 350 Ohm x10 load cells
- ZERO input：≥0.1mV
- SPAN input：≤20mV
- Up to 200000d (Max. display division)
- Power Input： 86~264VAC，≤ 0.1A
  NI-MH battery group,7.2 VDC 2200mAh(3800mAh is optional)
  Lead-Acid battery group,6VDC 4000mAh
- Support two serial ports:
  - COM1 – RS232 COM2 – RS485
  - Continuous output weight and Demand Input
  - Print weight out or print pound list
  - MODBUS-RTU
  - Support Label printer
- 10/100M Ethernet(Option)
  - TCP : Continuous output weight and Demand Input or print weight out
  - UDP: Continuous output weight and Demand Input or print weight out
- 2.4GHz Wireless WIFI(Option)
  - Continuous output weight and Demand Input or print weight out
- Blue Tooth(Option)
  - Continuous output weight and Demand Input or print weight out
- 1 Inputs and 3 relay outputs(Option)
  - Input trigger Zero, Tare or Print
  - Relay output
- Operating Environment
  Operating Temperature: -10℃~40℃
  Humidity: 10％RH~95％RH non-condensing

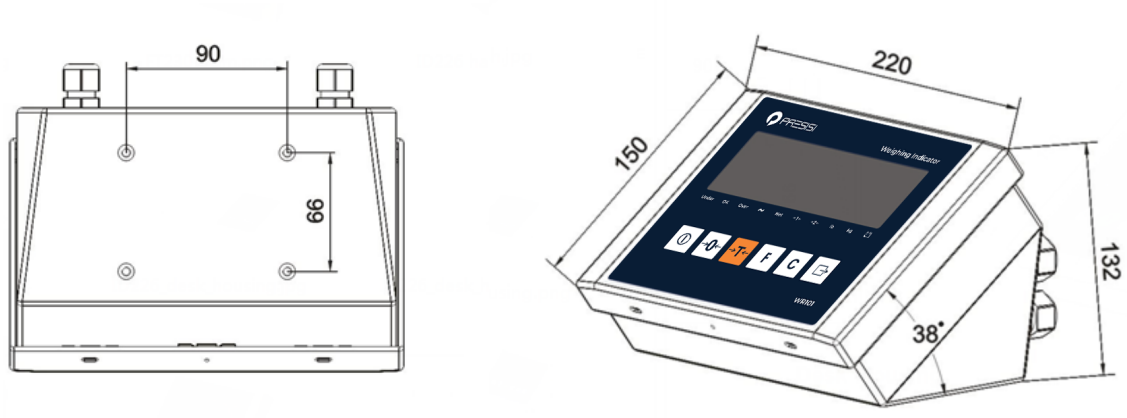
1.2 Key Points

- Up to 5 points calibration
- Basic Functionality： ZERO、TARE、CLEAR and PRINT
- Auto Tare, Auto Clear and Auto Print
- Print and Totalization
- X10 **/** Over/Under/OK **/** Count **/** Animal Weighing
- Auto save battery and battery indicating
- Auto Power OFF
- MODBUS-RTU communication
- Support serial port, TCP/UDP Ethernet, WIFI continue output and command input
- Over/Under/OK alarm output with relay output
- Support Label Printer
- External Input to **Zero**, **Tare**, **Clear** or **Print**.
- Load Cell off alarm

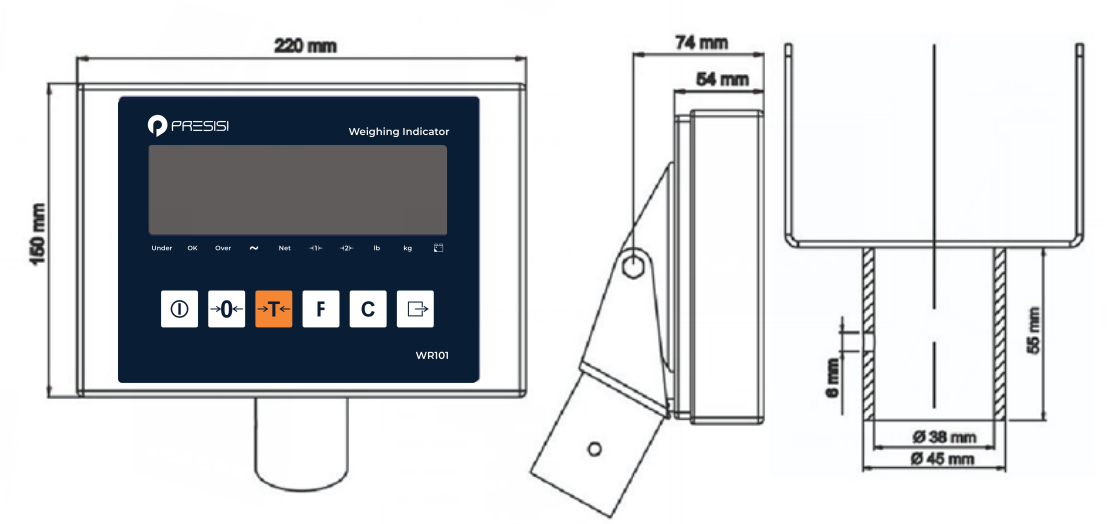
1.3 Configuration

BASIC	Serial Port(RS232 and 485), 1Scale(350ohm x 10 load cell)
Battery **Option**	NI-MH battery group (7.2 VDC 3800mAh), Lead-Acid battery group(6VDC 4000mAh)
Relay output **Option**	1 Input, 3 Relay outputs
RTC **Option**	Print with RTC(Real Time Clock)
Network **Option**	None / Ethernet /WIFI for continue output and command input

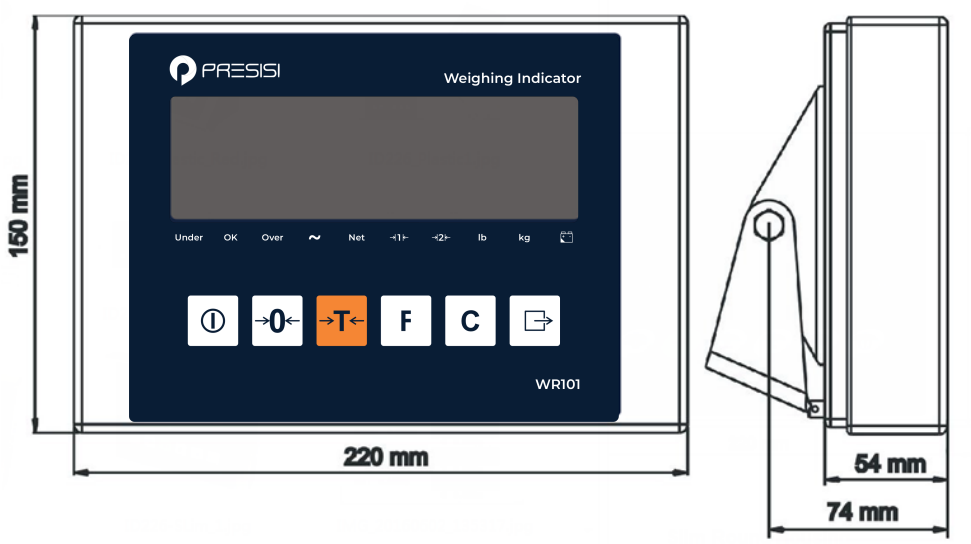
1.4 Enclosure and Housing



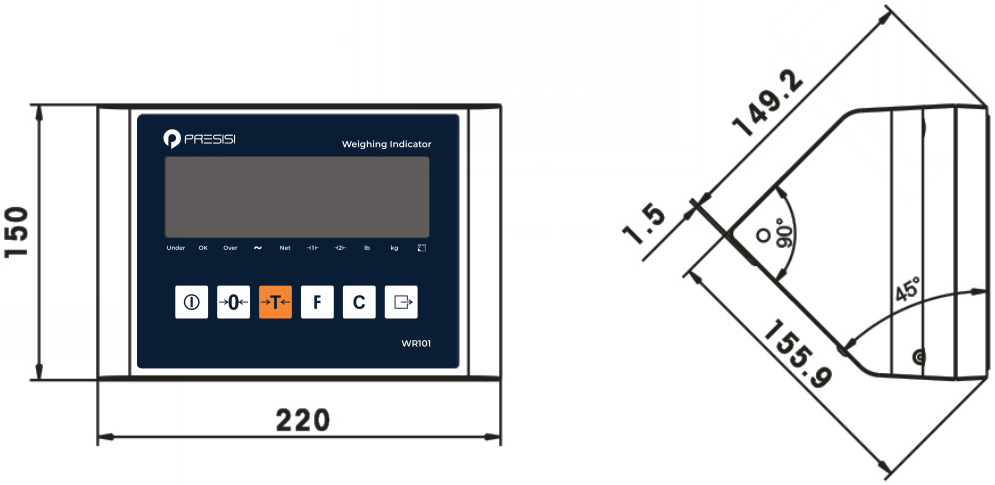
Desk Housing



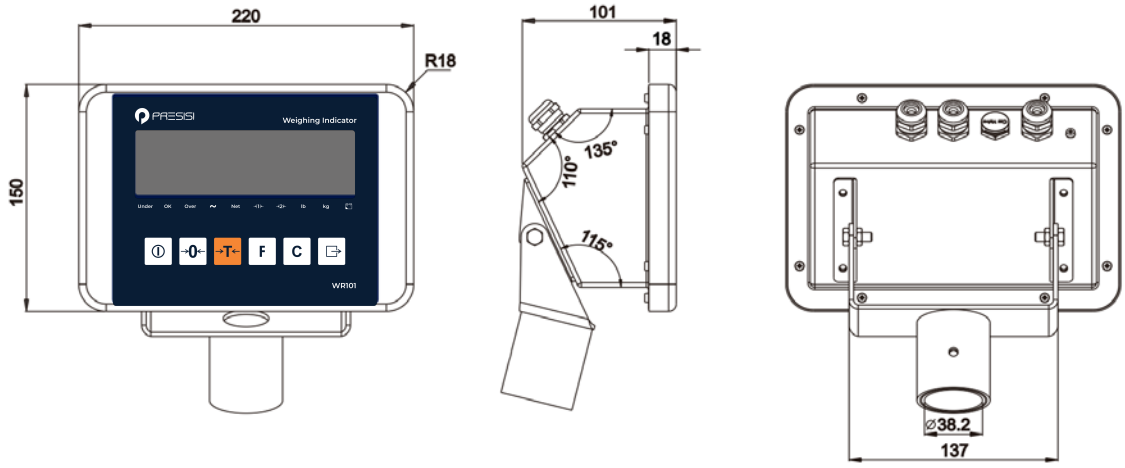
Slim Wall Housing



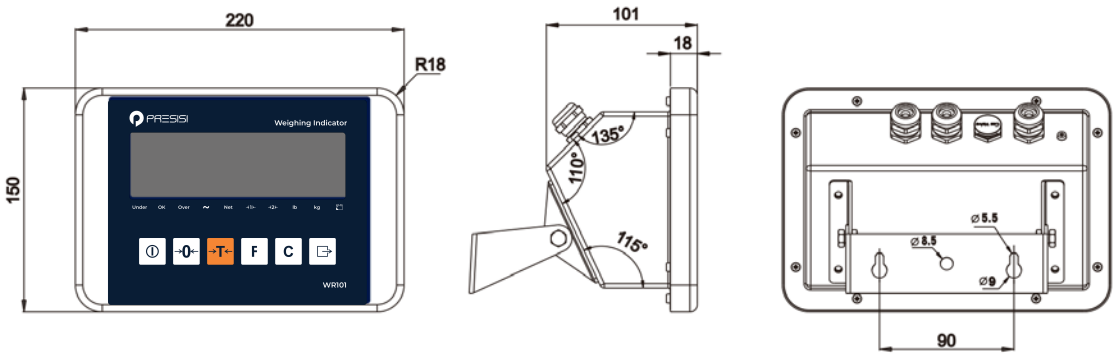
Slim Round Housing



Plastic body



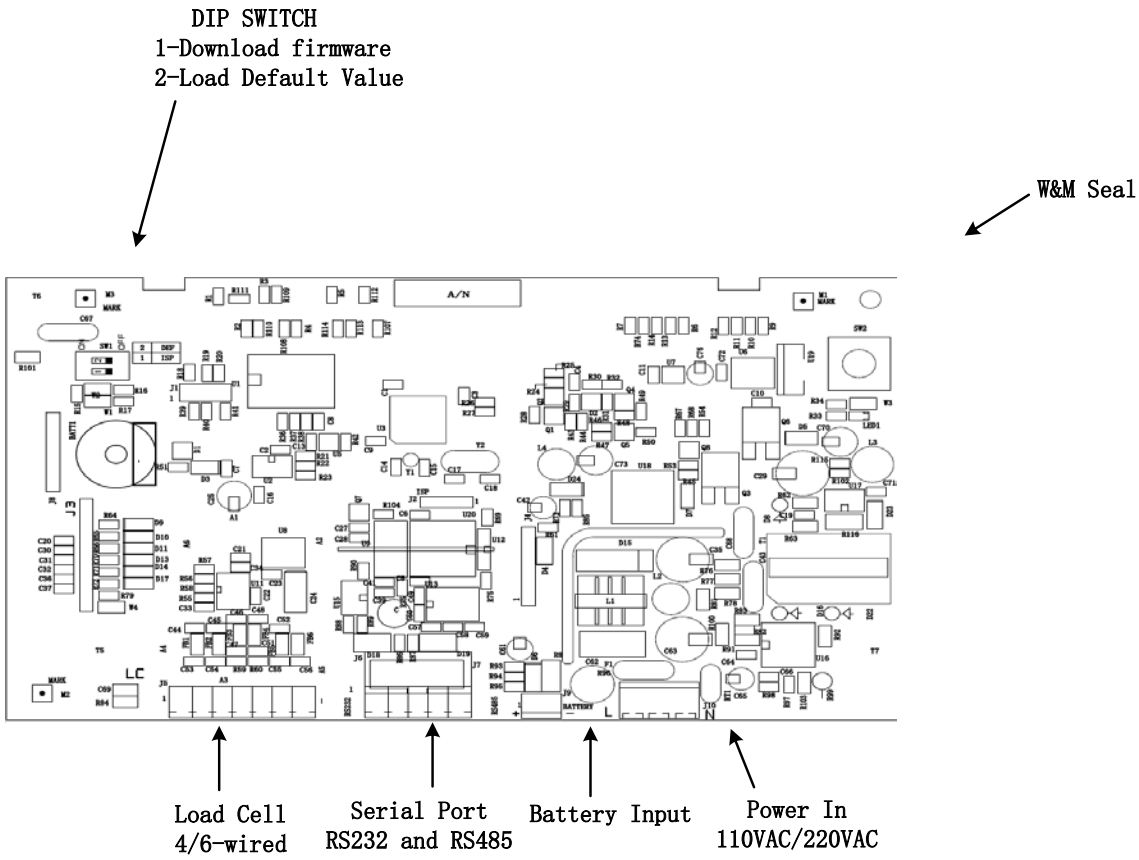
SS-2 Round Pole housing



SS-2 Desk & Wall housing

2 Harness Wiring Guide

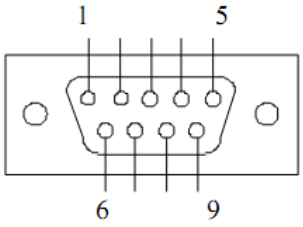
2.1 Main Board

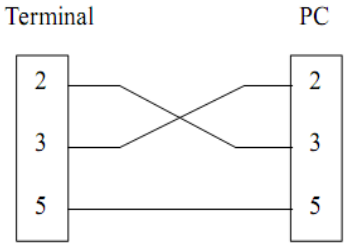


2.2 Interface Specification

Load Cell	
PIN NO.	PIN Name
1	-EXE
2	-SEN
3	-SIG
4	SHLD
5	+SIG
6	+SEN
7	+EXE

Serial Port(DB9)	
PIN NO.	PIN Name
1,4,6,9	NC
2	RXD(RS232) – COM1
3	TXD(RS232) – COM1
5	GND – COM1
7	A(RS485) – COM2
8	B(RS485) – COM2

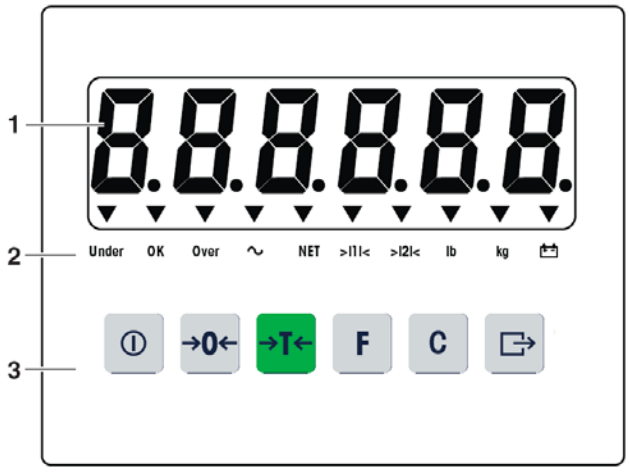




3 Operating Weighing Terminal

3.1 Keypad

Display



1 - 6-digit weight display
2 - Status indicators
3 - Keypad

Status indicators

LED	Meaning
Under / OK / Over Alternatively Count / PCS / APW Animal/ /	Indicators for check weighing Indicators for counting, overlay sticker included Indicators for animal weighing(Fast Blinking)
~	Motion Indicator
Net	The displayed weight value is a net weight value
>|1|< / >|2|<	Display of the current weighing range of the connected weighing platform.
Kg / lb	Currently chosen weight unit
	Conditions of the rechargeable battery ON: Battery is using, Slowly Blinking(Power on state):need charge Slowly Blinking(Power off state): charging

Keys

Key	Operating Mode	Menu	Key	Operating Mode	Menu
⏻	Switching power on/off;		F	Function Key	Back to the next higher menu item
→0←	Zeroing	Scrolling back	C	Clear Key	Back to the previous menu item
→T←	Tare	Scrolling forward	⇨	Transfer key Long key-press: Calling up menu	Activating menu item Accepting selected setting

3.1.1 ON/OFF Power

⏻ Power ON: Press ON/OFF key and keep 2 seconds, Power On and start display testing and display firmware version.
Power OFF: Press ON/OFF key and keep 2 seconds, display [–OFF-] and then power off.

3.1.2 Zero

→0← The zero display appears

3.1.3 Tare

→T← The zero display and the Net indicator appear

3.1.4 Clear

C The Net indicator goes out, the gross weight appears in the display.

3.1.5 Print

The display contents are printed out or transferred to a computer

3.2 F key

3.2.1 X10 (F2.1 = 0－X10)

→ Press F

The weight value is displayed with a higher resolution (x10) for about 20 seconds.

Note:

The weight value in higher resolution (x10) cannot be printed.

3.2.2 Over/Under/OK (F2.1 = 1— Over/Under)

F2.2.1 = **0**— Checking Mode

Target Setting (F2.2.2 = **0**— Weighing Input Mode)

Press **F** key to activate the check weighing function.

Press and hold **F** key 2 seconds until tArGEt and the 3 indicators Under, OK and Over appear.

Put the target weight on the weighing platform and save with **F** key. And back to display weight.

Less than target tolerance: Under In weight tolerance: OK More than tolerance: Over

Target Setting (F2.2.2 = 1— Manual Input Mode)

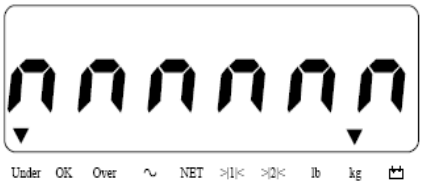
Press **F** key to activate the check weighing function.

Press and hold **F** key 2 seconds until tArGEt and the 3 indicators Under, OK and Over appear.

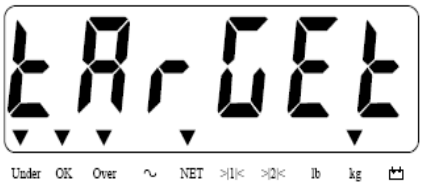
Save entered weight value as target weight using the key and back to display weight.

F2.2.1 = 1— Classify Mode

Target Setting (F2.2.2 = **0**— Weighing Input Mode)

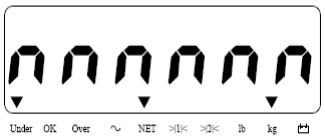


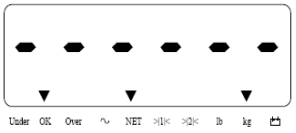
Press F key to activate the check weighing function.



Press and hold F key 2 seconds until tArGEt and the 3 indicators Under, OK and Over appear.

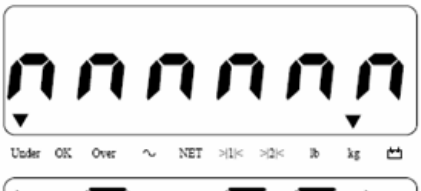
Put the target weight on the weighing platform and save with F key. And back to display weigh.





Less than target tolerance:Under In weight tolerance: OK More than tolerance: Over

Target Setting (F2.2.2 = 1— Manual Input Mode)



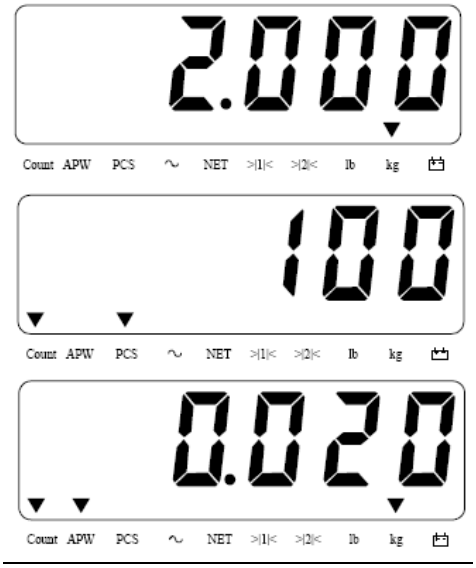
Press F key to activate the check weighing function.

Press and hold F key 2 seconds until tArGEt and the 3 indicators Under, OK and Over appear.

Save entered weight value as target weight using the key and back to display weight

3.2.3 Counting (F2.1 = 2)

Switch display weight and piece



Display Weight

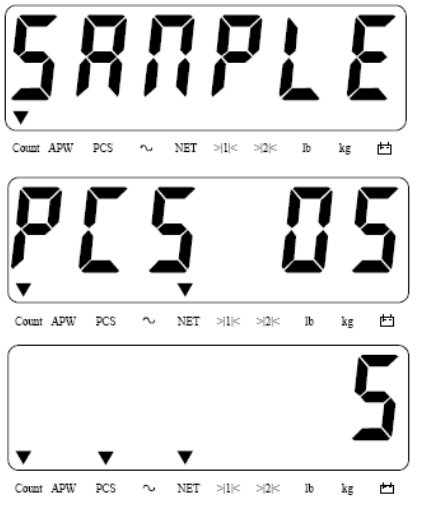
Press F

Display of the number of pieces.
The Count and PCS indicators light.

Press F

Display of the piece weight.
The Count and PCS indicators light.

Sample Piece Weight



Press F key for 2 seconds

Press F

Press F key repeatedly until the desired piece number(5,10,20,50) for the determination of the piece weight appears

Press key to back to Counting display

Notice: when F2.3—APW is configured as ON, Piece weight will be adjusted automatically

3.2.4 Animal Weighing (F2.4.1 = ON)

Display the animal final weight, Count and PCS indicator fast blinking

Display the real time weight and work in animal weighing mode

3.2.5 Print and Totalization (F2.1 = 3)

Press F key, serial port will print total counter and total weight out, and then total counter and total weight will be cleared automatically.

3.2.6 Unit Switch (Kg & Lb)

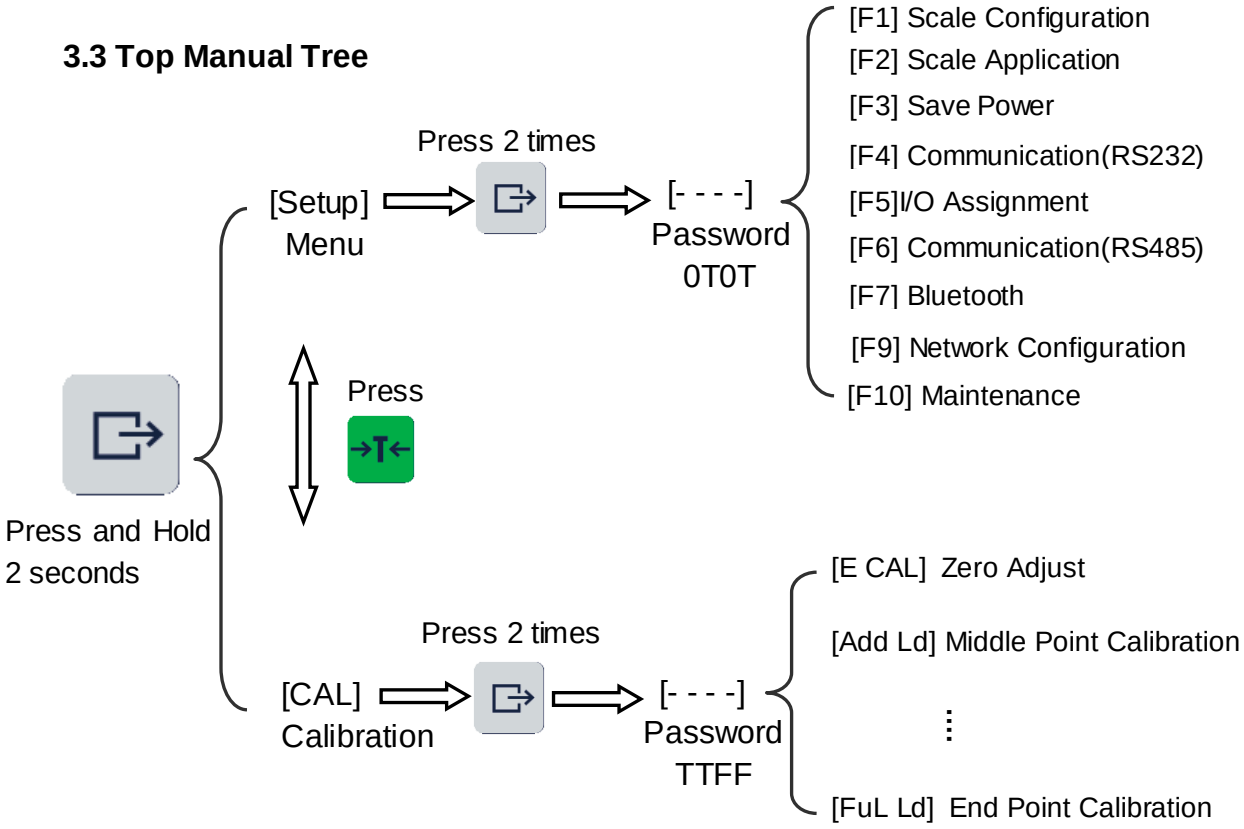
For this purpose, F2.1=4 (Unit Switch) must be set in the operator menu.

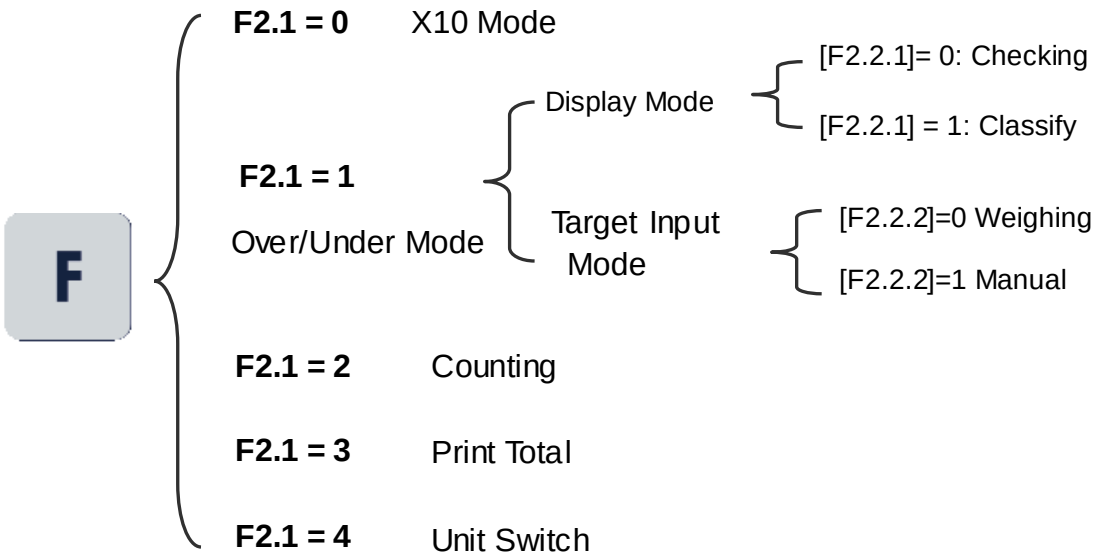
→ Press F The weight value is displayed in the second weight unit

Note:

The displayed weight will remain until it is switched again.

3.3 Top Manual Tree





3.4 Setup

F1 －Scale Configuration

F1.0 – Approval

0-**no** no approval

1-**OIML** approval according to OIML,

2-**ntEP** approval according to NTEP

F1.1－Scale Capacity & Increment Size

F1.1.1－ Scale Calibration Unit

0- kg, 1- lb

F1.1.2－ Increment Size

0.0001 ～ 20 (DFT: **0.001**)

F1.1.3－ Weighing Range

1 r － Single Range（DFT） **2 r － Double Range**

F1.1.4－Capacity or the 1st range capacity

When F1.1.3 = **1 r,** this value will be the capacity of scale，when F1.1.3=**2 r**，this value will be the 1st range capacity,30kg default.

F1.1.5－the 2nd range capacity

Only work when F1.1.3 =**2 r,** this value is 2nd range capacity**.**

F1.2－ Calibration Configuration

F1.2.1－GEO Code

GEO 0…31 (DFT: **GEO 0**)

F1.2.2－ Calibration Mode

0 - 2P － 2-Point-Calibration：Zero Point & End Point (DFT)

1 - 3P － 3-Point-Calibration: Zero Point & Middle Point & End Point

2 - 4P － 4-Point-Calibration

3 - 5P － 5-Point-Calibration

F1.3－ Zero Functions

F1.3.1－ Power Up Zero

OFF，2%，10%，20%（DFT）

F1.3.2－ Pushbutton Zero Range

OFF，1%， 2%(DFT)**， 4%， 10%， 20%，50%**

Notice：when F1.0 = 1-OIML,this value is restricted to no more than 2%.

F1.3.3－ Auto Zero Range

OFF,0.5d,1d, 2d，3d(DFT), 4d, 5d,6d,7d,8d,9d

F1.3.4－ Auto Zero Speed

OFF,0.1d/**S**econd，0.3d/S，0.5d/S，1d/S,1.3d/S，1.5d/S(DFT),
2.0d/S, 2.5d/S, 3.0d/S, 3.5d/S, 4.0d/S, 4.5d/S, 5.0d/S

F1.3.5— Load Cell Creep Adjustment
OFF(DFT)，0.1d/**S**econd, 0.2d/S， 0.3d/S， 0.4/S， 0.5d/S，

F1.4— Tare Function
F1.4.1— Auto Tare OFF（DFT） **ON**

F1.4.2—Auto Clear OFF(DFT) **ON**

F1.4.3—Tare Operation OFF – Always Disable Tare operation（DFT）
1 – Tare Interlock Enabled
2 – Tare Always Allowed

F1.4.4—Trigger Auto Tare Weight

F1.4.5—Trigger Auto Clear Weight

F1.5— Filter & Motion
F1.5.1— Filter ：0 (Light),1,2,3,4,5,6(DFT),7,8,9,10,11,12,13,14（Deep）

F1.5.2—Motion Check Range ：**0-OFF，1d/s**econd，**3d/s**（DFT），**5d/s**

F1.10— Default F1 Block

F2 — **Scale Application**

F2.1—F Key Assignment
0—X10（DFT），1—Over/Under，2—Counting 3 – Print Total
4 – Unit Switch (Kg & Lb)
Note：if use Over/Under function, F2.4.1 must be set to OFF.
F2.2—Over/Under Function
F2.2.1— Display Mode: **0**— Checking（DFT）， **1**— Classify

F2.2.2—Target Input Mode: **0**— Weighing（DFT）， **1**—Manual Input

F2.2.3—Upper Tolerance ：**0 –** No Checking(DFT)， **>0 -** Checking

F2.2.4—Lower Tolerance ： **0 –** No Checking(DFT)， **>0 -** Checking

F2.3—APW （Only in Counting Mode）
OFF – Disable (DFT) ON - Enable
If APW is enabled, the piece target value will be adjusted according to the counting number goes up, this function can increase counting precision.

F2.4 Animal Weighing Function

F2.4.1 Animal Weighing Mode ： OFF – Disable(DFT) ON - Enable

F2.4.2 Animal Weighing Sample Time

1**s**econd，2s， 3s ，4s， 5s(DFT)，6s，7s， 8s，9s，10s

F2.4.3 Animal Weight Display Hold Time

1**s**econd，2s， 3s ，4s， 5s(DFT)，6s，7s， 8s，9s，10s

F2.10－Default F2 Block

F3 － **Power Management**

F3.1－ Auto Power Off

OFF, 5 **m**inute, 10**m**, 30**m**(DFT), 60**m**

F3.2－ Save Power

OFF – Disable

ON – Enable(DFT): Scale keep stable above 20 seconds, display will be blinking to save battery power.

F3.10－Default F3 Block

F4 － **COM1 Configuration(RS232)**

F4.1－COM1 Application Assignment

0－None(DFT） **1**－ Continuous Output format 1 **2**－Demand Output,

3－Auto Print **4**－MODBUS-RTU **5** – Continuous Print Display Weight

6 – MT SICS **7** - Continuous Output format 2(KINGBIRD)

8 – Continuous Output format 3(YAOHUA)

9 – Continuous Output format 4(YAOHUA)

10 – Continuous Output format 5(YAOHUA)

11 – BarCode Scanner In and Label Printer.

12 – IND221 Print. **13** – IND221 Auto Print.

14—JM print format.

CNT99—WEBO Continuous Output format

16—MODBUS-RTU2 Integer format.

F4.1.1－MODBUS Node Address（DFT=01）

F4.2－COM1 Print Configuration

F4.2.1－Print Format **0**－1-Line（DFT） **1**－3-Line

F4.2.2－Print Data

0－Standard（DFT） **1**－Over/Under **2**－Counting

3－PQ20 Label Printer prints gross, tare and net weight.

4－PQ20 Label Printer prints gross, tare, net weight and barcode.
5－GoDEX Label Printer prints display weight or gross, tare and net weight.
6－GoDEX Label Printer prints display weight or gross, tare, net weight and logo picture.
7－GoDEX Label Printer prints logo picture and display weight and its barcode.
8－GoDEX Label Printer prints logo picture ,SN and display weight and their barcode.

F4.2.3－Line Break :**0 ~ 9** (DFT: **1**)

F4.2.4－Auto Print Threshold ： **0 ~ Maximum Load** （DFT: **0**）

F4.2.5－Auto Print Reset Threshold ： **0 ~ Maximum Load** （DFT: **0**）

F4.2.6－Start Auto Print Delay ： **0~99x0.1s**（DFT: 0.5s）

F4.2.7－Auto Print Minimum Threshold ： **0~99d**（DFT: 5d）

F4.3－COM1 Serial Port Configuration

F4.3.1－Baud Rare：**1200,2400,4800,9600**（DFT）

F4.3.2－Data Size & Parity
0－8,n,1（8 data bit, no parity,1 stop bit. DFT）
1－7,odd,1(7 date bit，ODD parity，1 stop bit)
2－7,EUEn,1 (7 data bit，EVEN parity，1 stop bit)

F4.3.3－Interface ： **0－RS232**

F4.3.4－ Send Print Direction Command
0 – Disable 1- Right to Left 2 – Left to Right

F4.4－Print Totalization: **OFF**－ Disable ON－Enable

F4.10－Default F4 Block

F5－**I/O Assignment (Optional)**

F5.1－Input Assignment
0－ None （DFT） **1**－ZERO **2**－TARE/CLEAR)
3－PRINT **4**－Clear Print Flag

F5.2－Output Assignment
0－ Out1: Under，Out2 : OK，Out3 : Over（DFT）
1－ Out1: Print Triggered Bit

2— all three out are controlled by Modbus-RTU

F5.10—Default F5 Block

F6 — **COM2 Configuration (RS485)**

F6.1—COM2 Application Assignment

0—None(DFT） **1**— Continuous Output format 1 **2**—Demand Output,

3—Auto Print **4**—MODBUS-RTU **5** – Continuous Print Display Weight

6 – MT SICS **7** - Continuous Output format 2(KINGBIRD)

8 – Continuous Output format 3 **9** – Continuous Output format 4

10 – Continuous Output format 5

11 – BarCode Scanner In and Label Printer.

12 – IND221 Print. **13** – IND221 Auto Print.

14—JM print format.

CNT99—WEBO Continuous Output format

16—MODBUS-RTU2 Integer format.

F6.1.1—MODBUS Node Address（DFT=01）

F6.2—COM2 Print Configuration

F6.2.1—Print Format **0**—1-Line（DFT） **1**—3-Line

F6.2.2—Print Data

0—Standard（DFT） **1**—Over/Under **2**—Counting

3—PQ20 Label Printer prints gross, tare and net weight.

4—PQ20 Label Printer prints gross, tare, net weight and barcode.

5—GoDEX Label Printer prints display weight or gross, tare and net weight.

6—GoDEX Label Printer prints display weight or gross, tare, net weight and logo picture.

7—GoDEX Label Printer prints logo picture and display weight and its barcode.

8—GoDEX Label Printer prints logo picture ,SN and display weight and their barcode.

F6.2.3—Line Break :**0 ~ 9** (DFT: **1**)

F6.3—COM2 Serial Port Configuration

F6.3.1—Baud Rare：**1200,2400,4800,9600**（DFT）

F6.3.2—Data Size & Parity

0—8,n,1（8 data bit, no parity,1 stop bit. DFT）

1—7,odd,1(7 date bit，ODD parity，1 stop bit)

2—7,EUEn,1 (7 data bit，EVEN parity，1 stop bit)

F6.3.3－Interface ： **1－RS485**

F6.3.4－ Send Print Direction Command
0 – Disable 1- Right to Left 2 – Left to Right

F6.4－Print Totalization: **OFF**－ Disable ON－Enable

F6.10－Default F6 Block

F7 － **Bluetooth**

F7.1－Application Assignment
0－None(DFT） **1**－ Continuous Output format 1 **2**－Demand Output,
3－Auto Print **4** – Continuous Print Display Weight
5 – Continuous Output format 3 **6** – Continuous Output format 4
7 – Continuous Output format 5
8 – BarCode Scanner In and Label Printer.

F9 — **Network Configuration**

F 9.1 IP Address
Default: 192.168.18.1

F 9.2 Submask
Default: 255.255.255.0

F 9.3 Gateway
Default: 192.168.0.1

F 9.4 Continue Output Mode
0 – Disable（DFT）
1 – TCP1, 17 bytes ,no check byte, support command C、T、Z
2 – TCP2, 18 bytes include check byte, support command C、T、Z
3 – UDP1,17 bytes ,no check byte, support command C、T、Z
4 – UDP2,18 bytes include check byte, support command C、T、Z

F 9.5 Command Input/Output Mode
0 – Disable（DFT）
1 – TCP1，support command C,P,T,Z, 1-line print display weight
2 – TCP2，support command C,P,T,Z, 1-line print gross weight, tare weight, net weight
3 – UDP1，support command C,P,T,Z, 1-line print display weight
4 – UDP2，support command C,P,T,Z, 1-line print gross weight, tare weight, net weight
5 – BARC，in WiFi mode, output barcode and weight,must be used together with barcode scanner.

Notice：if use *F9.5 1/2/3/4/5 function, have to set F9.4 = 0-Disable*。
Another,for 1,2,3,4, auto print function is supported

F9.6 Change WiFi work mode

Default: 0,when from 0 to 1, WiFi work mode be changed to AP mode.

F9.7 UDP Target Address

Default: 192.168.18.201

F9.8 TCP/UDP Continue output frequence

Default : 20，Range: 1 -50，if set to 50，50 times output per second.

F9.9 TCP/UDP Port

Default: 1025，Range: 1024-65535。

The indicator listens this port when working in TCP mode,. But in UDP mode, the local port and remote port both are this port, so it can print output data from this port to the UDP Target Address, and receive command data from it. And also the host whose IP is the UDP Target Address must send command to only this port, not other port,otherwise,the indicator cannot receive the command data. .

F10—Maintenance

F10.1—Load Cell I/F Testing

F10.2—Key Testing

Display：“PrESS, Press below keys in turn : ZERO，F，Clear，Print , Tare. “ZERO”, “F”,”CLEAR”,”PRINT”,”TARE” will be displayed in turn, and then exit key testing page after Tare key pressed in 1 second

F10.3—Relay In state

0 – means relay in state is OFF, 1 – means ON

F10.4—Relay out testing

000 – from right to left, means OUT1 ,OUT2,OUT3 state. Change the number to 1,to set the relay out state to ON, change the number to 0, to set the relay out state to OFF.

F10.5—date

Can look the current date and change it

F10.6—time

Can look the current time and change it

F10.F— W&M Sealing

Unsealed

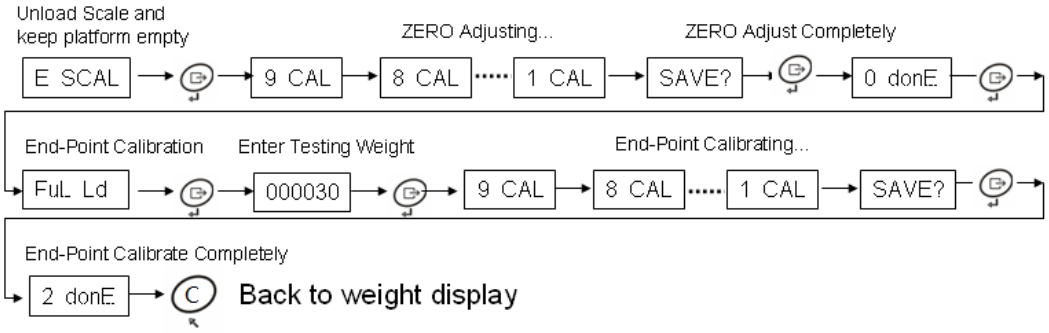
Sealed

Press W&M seal SWITCH and hold 1 second to change W&M seal status from unseal

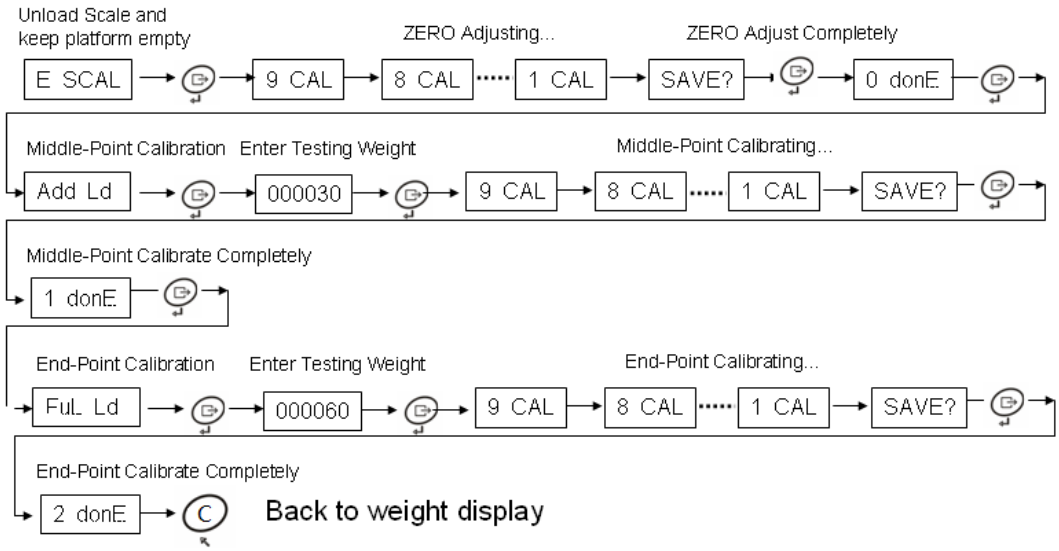
to seal or from seal to unseal. In seal, F1.1 and F1.2 blocks will not be allowed to do any change.

3.5 Calibration

2-Point Calibration:



3-Point Calibration:

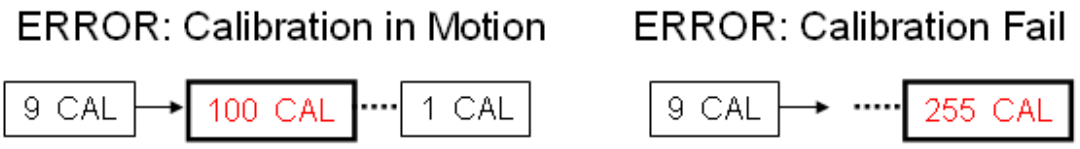


4-Point Calibration:

Referring 3-point Calibration, make zero-point calibration first, then following middle-1, middle-2, middle-3(End Point) calibration.

5-Point Calibration:

Referring 3-point Calibration, make zero-point calibration first, then following middle-1, middle-2, middle-3, middle-4 (End Point) calibration.



4 COM application

This chapter is the description of COM application, apply to RS232 and RS485 port. Some parameters are F4.X.X for RS232, but for RS485,must be F6.X.X.
The data format 1 is supported by COM1,COM2,Bluetooth,TCP ,UDP and Wifi.
The data format 2 to 5 is supported by COM1,COM2 and Bluetooth.

4.1 Continuous Output

Format 1:

STX	SWA	SWB	SWC	XXXXXX	XXXXXX	CR	CHK
A	B	C	D	E	F	G	H

※ **Node**:

A – STX: ASCII 02H
B – SWA: Status A
C – SWB: Status B
D – SWC: Status C
E – Display Weight , 6 digits without decimal
F – Tare Weight, 6 digits without decimal
G – CR: ASCII 0D**H**
H – CHK: Checksum, CHK is used to detect errors in the transmission of data. Checksum is defined as the 2's complement of the seven low order bits of the binary sum of all characters preceding the checksum character, including the <STX> and <CR> characters.

SWA: Status **A**

Bit	
0 1 2	Bit2 / Bit1 / Bit0 / Decimal Point Location 0 / 0 / 1 / XXXXX0 0 / 1 / 0 / XXXXXX 0 / 1 / 1 / XXXXX.X 1 / 0 / 0 / XXXX.XX 1 / 0 / 1 / XXX.XXX 1 / 1 / 0 / XX.XXXX
3 4	Bit4 / Bit3 / Build Code 0 / 1 / X1 1 / 0 / X2 1 / 1 / X5
5	Always 1
6	Always 0

7	EVEN/ODD Parity bit

SWB: Status **B**	
Bit	
0	0 – Gross, 1 – Net
1	Sign, Positive = 0, Negative = 1
2	Out of Range = 1 (Over capacity or Under Zero)
3	Motion = 1, Stable = 0
4	0 – lb, 1 – kg
5	Always 1
6	0 – Normal, 1 – Power ON
7	EVEN/ODD Parity bit

SWC: Status **C**	
Bit	
0	Always 0
1	Always 0
2	Always 0
3	Always 0
4	0 – X10 OFF, 1- X10 ON
5	Always 1
6	Always 0
7	EVEN/ODD Parity bit

Format 2:

This format is same as format 1 except SWA as follow.

SWA: Status **A**	
Bit	
0	
1	
2	
3	
4	
5	Always 1
6	Always 0
7	EVEN/ODD Parity bit

Bit2	**Bit1**	**Bit0**	**Decimal Point Location**
0	**0**	**1**	**XXXXX0**
0	**1**	**0**	**XXXXXX**
0	**1**	**1**	**XXXXX.X**
1	**0**	**0**	**XXXX.XX**
1	**0**	**1**	**XXX.XXX**
1	**1**	**0**	**XX.XXXX**

Bit4	Bit3	**Build Code**
0	1	X1
1	0	X2
1	1	X5

Format 3(YAOHUA):

Out data format is "= weight(decimal point included)",ASCII code.

First char is the lower char , last char is the higher char. There is 6 char ,not include decimal point, if not enough, fill it to 6 char by '0' .

Such as:

Display weight is -500.00kg, the output ASCII is "=00.005-";

Display weight is 12.04kg,the output ASCII is "=40.2100"

Format 4(YAOHUA):

Output data is display weight.

When gross:

Greater than 0: "ww000.000kg"; less than 0: "ww-00.000kg"

When Net:

Greater than 0: "wn000.000kg"; less than 0: "wn-00.000kg"

Format 5(YAOHUA):

This format is same as format3, but only output data when the scale weight is stable.

4.2 Demand Input / Output

Both RS232 & RS485 can be configured continuous output or demand input/output, below commands are supported.

Demand Input		
Demand	**Description**	**Response & output**
C	Clear Tare	None
T	Tare Scale	None
P	Print	Print data out from serial port
Z	Zero Scale	None

4.3 Print

4.3.1 Standard Pound List Without RTC

F4.1=2	F4.1=2	F4.1=2	F4.1=2
F4.2.1=0	F4.2.1=1	F4.2.1=0	F4.2.1=1
F4.2.2=0	F4.2.2=0	F4.2.2=0	F4.2.2=0
F2.4.1=OFF	F2.4.1=OFF	F2.4.1=ON	F2.4.1=ON
F4.4 = ON	F4.4 = ON	F4.4 = ON	F4.4 = ON

(Set F2.1=3, Press F key to print total weight)

```
   POUND LIST
NO.    WEIGHT
---------------------
0001   10.5 KG N
0002   10.3 KG N
0003   9.4   KG N
---------------------
COUNT:    0003
TOTWT:   30.2 KG
```

```
      POUND LIST
NO.          0001
GROSS      11.6 KG
TARE        1.1 KG
NET        10.5 KG
      POUND LIST
NO.          0002
GROSS      11.2 KG
TARE        1.1 KG
NET        10.1 KG
---------------------
COUNT:       0002
TOTWT:     20.6 KG
```

```
ANIMAL POUND
NO.          NET
---------------------
0001   10.5 KG N
0002   10.3 KG N
0003   9.4   KG N
---------------------
COUNT:   0003
TOTWT: 30.2 KG
```

```
ANIMAL POUND
NO.          0001
GROSS      11.6 KG
TARE        1.1 KG
NET        10.5 KG
ANIMAL POUND
NO.          0002
GROSS      11.2 KG
TARE        1.1 KG
NET        10.1 KG
---------------------
COUNT:       0002
TOTWT:     20.6KG
```

4.3.2 Standard Pound List With RTC

F4.1=2	F4.1=2	F4.1=2	F4.1=2
F4.2.1=0	F4.2.1=1	F4.2.1=0	F4.2.1=1
F4.2.2=0	F4.2.2=0	F4.2.2=0	F4.2.2=0
F2.4.1=OFF	F2.4.1=OFF	F2.4.1=ON	F2.4.1=ON
F4.4 = ON	F4.4 = ON	F4.4 = ON	F4.4 = ON

```
      POUND LIST
Date    2014/01/01
Time       NO.    Net Wt.
--------------------------------
08:10:05 0001 10.5 kg
08:15:16 0002 10.3 kg
08:16:18 0003   9.4 kg
--------------------------------
COUNT          3
TOTWT.       30.2 kg
```

```
      POUND LIST
Date    2014/01/01
Time    08:10:05
NO.          0001
Gross       11.6 kg
Tare         1.1 kg
Net         10.5 kg
      POUND LIST
Date    2014/01/01
Time    08:15:13
NO.          0002
Gross       11.2 kg
Tare         1.1 kg
Net         10.1 kg
-------------------------
COUNT          2
TOTWT        20.6kg
```

```
     ANIMAL POUND
Date    2014/01/01
Time          NO.       Net Wt.
-------------------------------------
08:10:05    0001    10.5 kg
08:15:16    0002    10.3 kg
08:16:18    0003    9.4    kg
-------------------------------------
COUNT          3
TOTWT        30.2 kg
```

```
     ANIMAL POUND
Date    2014/01/01
Time    08:10:05
NO.          0001
Gross       11.6 kg
Tare         1.1 kg
Net         10.5 kg
ANIMAL POUND
Date 2014/01/01
Time 08:15:06
NO          0002
Gross       11.2 kg
Tare         1.1 kg
Net         10.1 kg
-------------------------
COUNT          2
TOTWT        20.6kg
```

4.3.3 Over/Under Pound List

F4.1=2	F4.1=2
F2.1=1	F2.1=1
F4.2.1=0	F4.2.1=1
F4.2.2=1	F4.2.2=1
F4.4 = ON	F4.4 = ON

```
     CHECKING POUND
NO.          WEIGHT
---------------------------------------
0001   10.5 KG N   OVER
0002   10.3 KG N   OK
0003   9.4   KG N   UNDER
---------------------------------------
COUNT:          0003
TOTWT:       30.2 KG
```

```
    CHECKING POUND
NO.          0001
GROSS       11.6 KG
TARE         1.1 KG
NET         10.5 KG OVER

    CHECKING POUND
NO.          0002
GROSS       11.2 KG
TARE         1.1 KG
NET         10.1 KG OK
--------------------
COUNT:          0002
TOTWT:        20.6 KG
```

4.3.4 Counting Pound List

F2.1= 2
F4.2.1=0
F4.2.2=2

```
10.5 KG N   21 PCS
10.3 KG N   20 PCS
 9.4 KG N   19 PCS
```

F2.1= 2
F4.2.1=1
F4.2.2=2

```
   COUNTING POUND
GROSS      11.6 KG
TARE        1.1 KG
NET        10.5 KG
PCSWT.     0.5KG
PCS        000021 PCS
```

4.4 MODBUS-RTU Floating format

MODBUS-RTU			
Address	**Description**		**R/W**
40001	0	0 = Gross, 1 = Net	**R**
	1	Sign, Positive = 0, Negative = 1	
	2	Out of Range = 1 (Over capacity or Under Zero)	
	3	Motion = 1, Stable = 0	
	4	Reserved	
	5	Reserved	
	6	Reserved	
	7	0 – No Print， 1 – Print Completely	
	8	0-lb , 1-kg	
	9-14	Reserved	
	15	0 – Data not OK, 1 – Data OK	
40002/3	Display Weight, 32-bit floating data		**R**
40004/5	Print Total Weight, 32-bit floating data		**R**
40006	Print Total Counter,		
40007	**Bit0 ~ Bit 6** – Reserved **Bit 7 –** 0->1 Trigger to Clear bit 40001.7 **Bit 8** – Reserved **Bit 9** – Reserved **Bit 10** –0->1 Trigger to clear totallization (Weight & Counter) **Bit 11** –0->1 Trigger to Zero Scale **Bit 12** –0->1 Trigger to Tare Scale **Bit 13** –0->1 Trigger to Clear Scale **Bit 14** –0->1 Trigger to do digital tare **Bit 15** – Reserved		**R/W**

4.5 MODBUS-RTU Integer format

MODBUS-RTU			
Address	**Description**		**R/W**
40001	0	0 = Gross, 1 = Net	**R**
	1	Sign, Positive = 0, Negative = 1	
	2	Out of Range = 1 (Over capacity or Under Zero)	
	3	Motion = 1, Stable = 0	
	4	Reserved	
	5	Reserved	
	6	Reserved	
	7	0 – No Print， 1 – Print Completely	
	8	0-lb , 1-kg	
	9-14	Reserved	
	15	0 – Data not OK, 1 – Data OK	
40002	Weight times(1\10\100\1000)		**R**
40003	Display Weight, 16-bit integer data(Divide by 40002 to get the actual weight)		
40004/5	Print Total Weight, 32-bit Integer data(Divide by 40002 to get the actual weight)		**R**
40006	Print Total Counter,		
40007	**Bit0 ~ Bit 6** – Reserved **Bit 7 –** 0->1 Trigger to Clear bit 40001.7 **Bit 8** – Reserved **Bit 9** – Reserved **Bit 10** –0->1 Trigger to clear totallization (Weight & Counter) **Bit 11** –0->1 Trigger to Zero Scale **Bit 12** –0->1 Trigger to Tare Scale **Bit 13** –0->1 Trigger to Clear Scale **Bit 14** –0->1 Trigger to do digital tare **Bit 15** – Reserved		**R/W**

4.6 Compatible to MT SICS Commands

The weighing terminal supports the MT-SICS (METTLER TOLEDO Standard Interface Command Set) command set. With SICS commands, it is possible to configure, query and operate the terminal from a PC.

	Command	Meaning
LEVEL 0	@	Reset the scale
	I0	Inquiry of all available SICS commands
	I1	Inquiry of SICS level and SICS version
	I2	Inquiry of scale data
	I3	Inquiry of scale software version
	I4	Inquiry of serial number
	S	Send stable weight value
	SI	Send weight value immediately
	SIR	Send weight value immediately and repeatedly
	Z	Zero the scale
	ZI	Zero immediately
LEVEL 1	T	Tare
	TAC	Clear tare
	TI	Tare immediately

For Example:

T CR LF : Tare scale and go to zero net weight display
TAC CR LF: Clear tare and back to gross weight display
Z CR LF: Zero scale and go to zero gross weight display.

5 Ethernet Application

Ethernet function is optional, please check the Selection Guide at start part.

5.1 Continue output mode

In this mode ,as a TCP server, the scale listen the port set in F9.9,and send weighing data to the connecting client continually, receive command data from the client also. If work in UDP mode, the scale send weighing data to the IP address set in F9.7 and the port set in F9.9 by UDP packet, and only receive command from the port set in F9.9.

The weighing data format is same to the Serial Port output, see 4.1 for details.

Supported command characters and their definitions, see 5.2.

5.2 Command mode

Command mode is supported in TCP and UDP, See the table below for command definitions.

Command Definition	
Command	Function
C	Clear Tare
P	Print
T	Tare
Z	Zero

6 WIFI Application

WIFI Function is optional, please check the Selection Guide at start part.

WIFI Application has two work mode, AP mode and STA mode.

AP: as a wireless access point，is the center point in the LAN, like an wireless router, other terminal can connect the AP.

STA: as a wireless station, is a terminal. like a laptop or cellphone.

Work in two modes ,the weighing data format for continue output and supported command are same to the Ethernet Application, just different networking mode.

The AP mode is defaulted.

6.1 AP Mode

Work in AP mode, networking mode as shown below, apply to point to point communication.

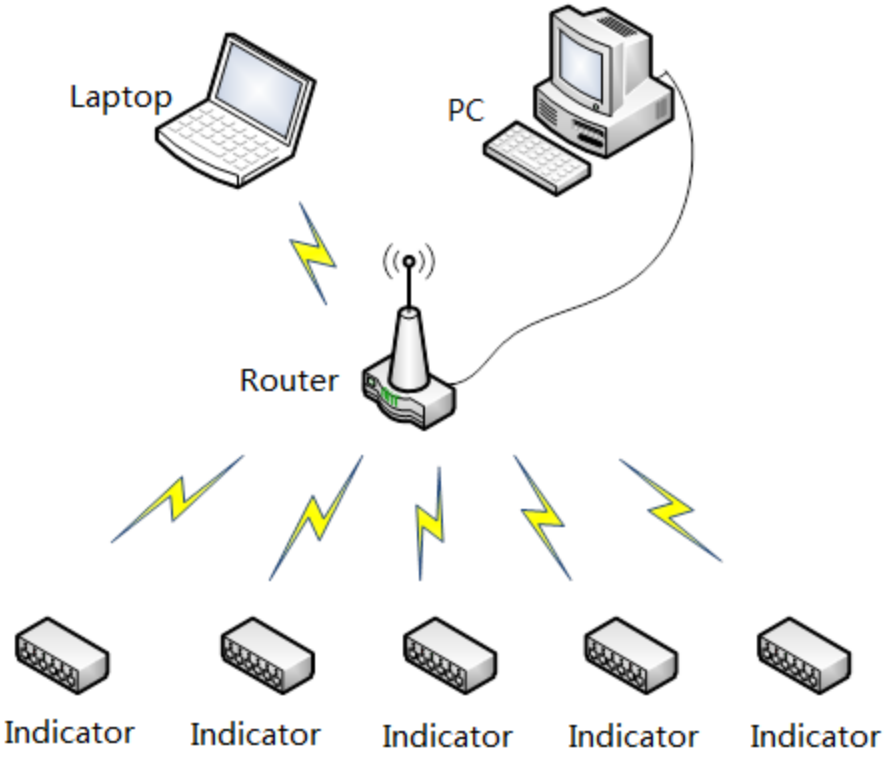
In this mode ,as a wireless hotspot, the terminal like laptop can connect the scale, and then ,laptop can communicate with the indicator by WIFI. The parameter is same to the Ethernet Application Mode.

The wireless hotspot named “ID226” is created when the indicator power on, the password is “123456789”. When using ,first, set the parameter in F9, second ,the laptop and other wireless terminal is set to automatically obtain IP address mode，and then connect the hotspot “ID226”,when successed, it can be used easily like Ethernet Application. The details are provided in the part of network application test.

6.2 STA Mode

Work in STA mode, networking mode as shown below, apply to muti-terminal connect

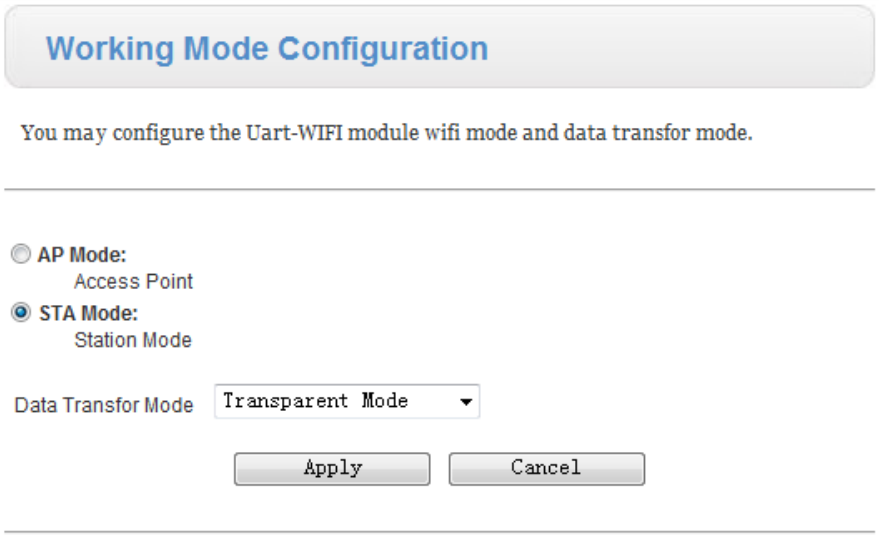
communication.



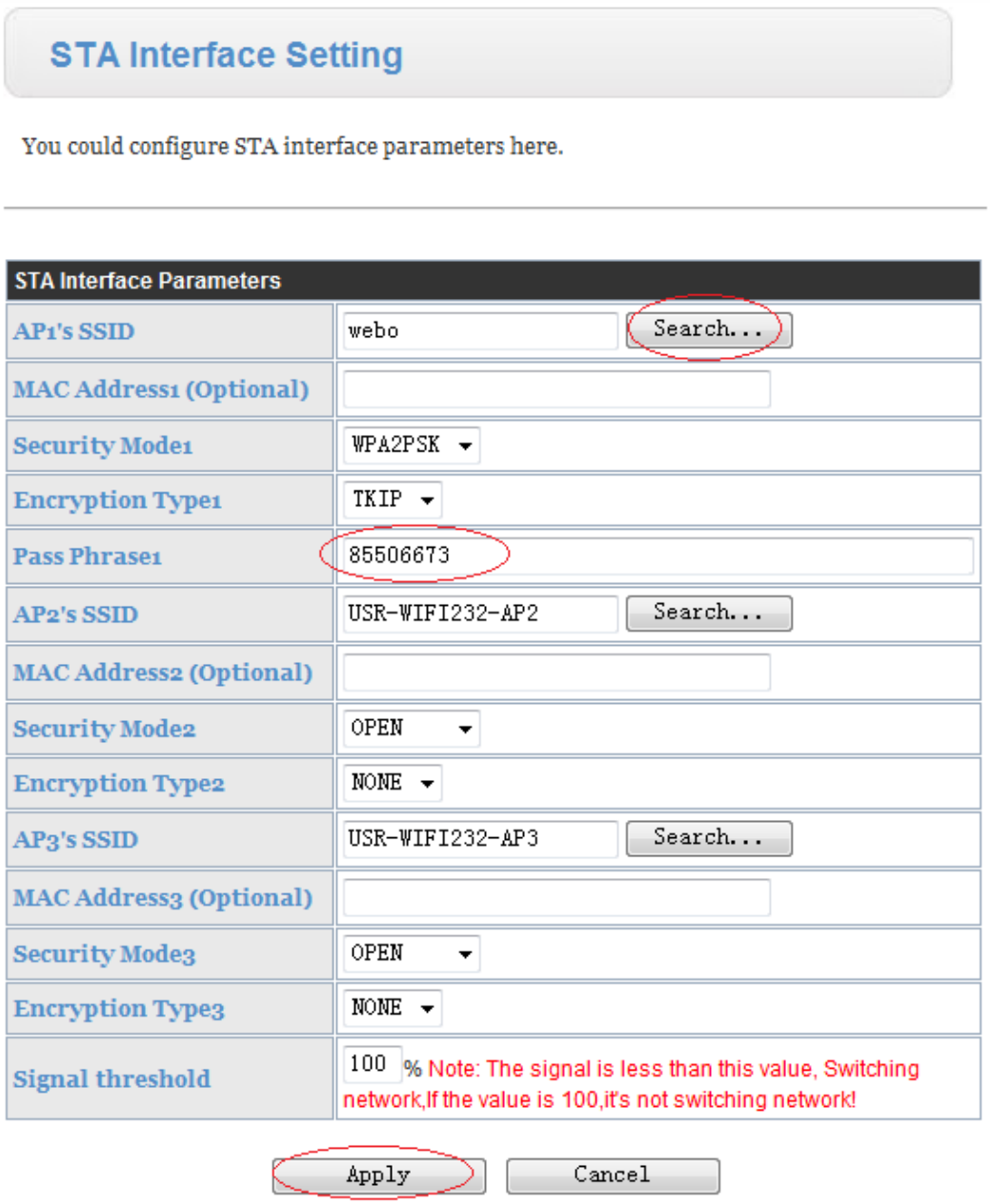
In this mode, need to set parameter by Web page, Steps are as follows.

(1)First, Connect the wireless hotspot called "ID226", the password is "123456789". Second, Input "http://192.168.18.1/" in the IE browser address bar and enter, then input the user name and the password ,both "admin", then click "ok" button.

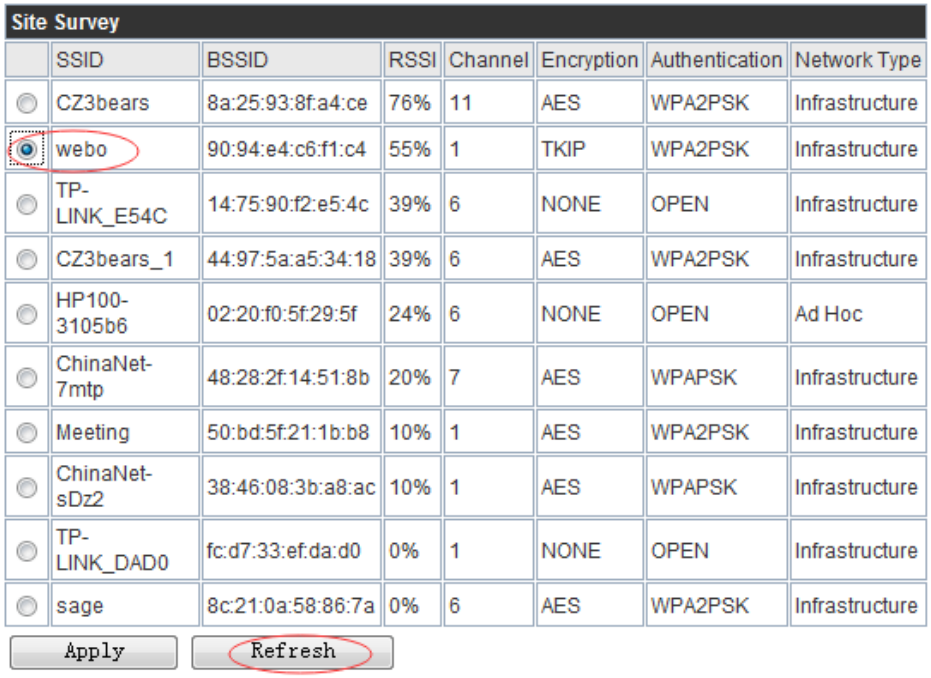
(2)Connect Router. The web page is shown below.



In the picture above, change the working mode to STA Mode, and then switch to the STA Interface Setting tab.



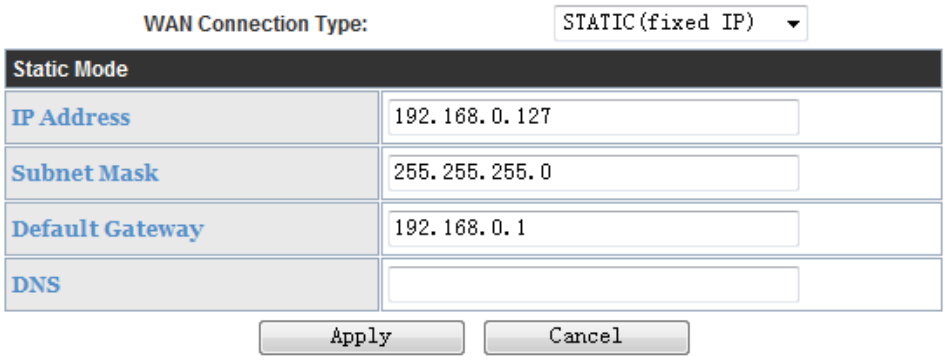
Click the “Search” button in the picture above, the wireless network list window will be open.



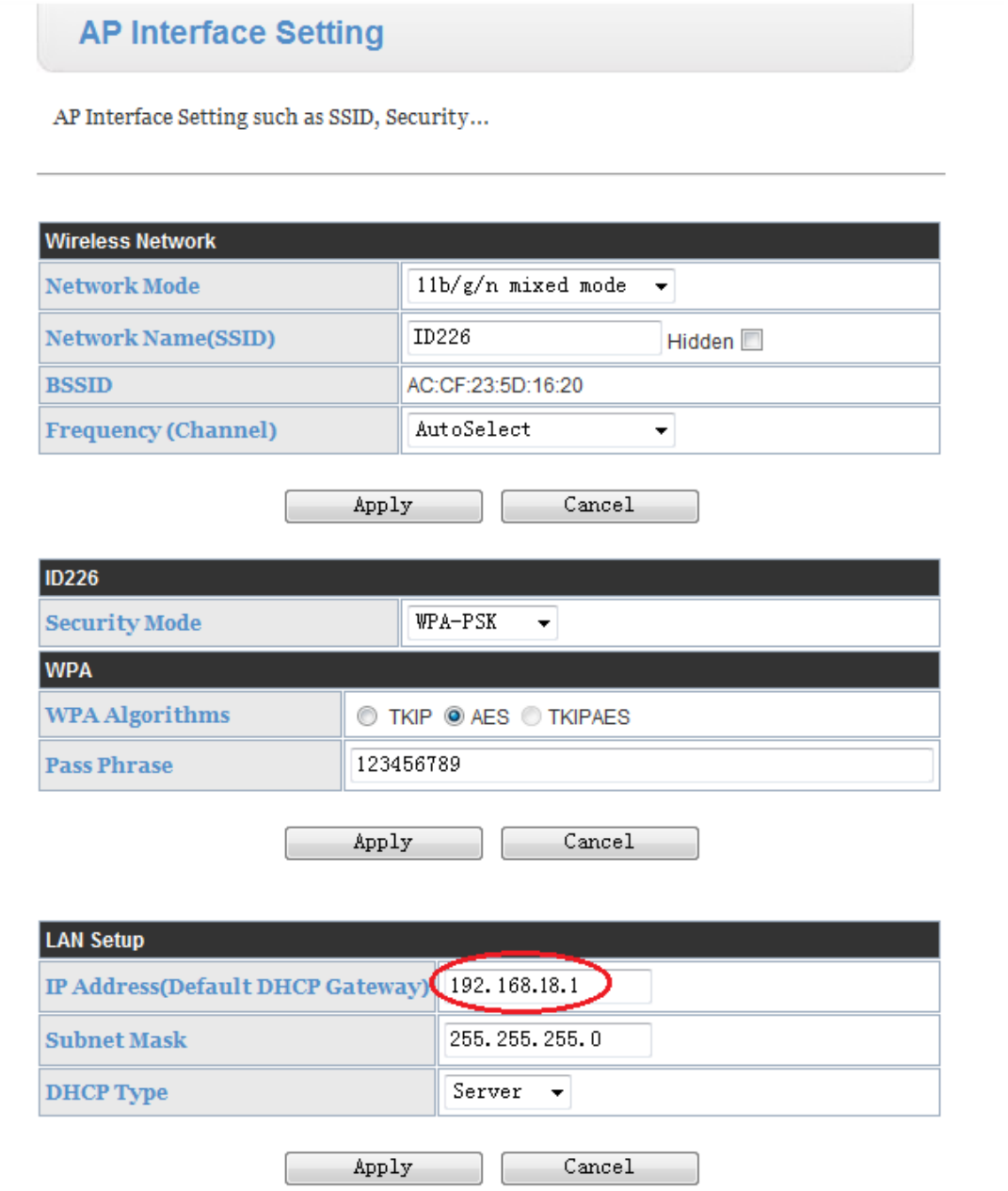
Select the hotspot by name, and click the “Apply” button. You can click the “Refresh” button to refresh the network list.

(3)Set IP Address. On the STA Interface Setting tab page, change the “WAN Connection Type” to “STATIC(fixed IP)”, and set IP Address“192.168.0.127”,Subnet Mask “255.255.255.0”, Default Gateway “192.168.0.1”,then click “Apply” button.

Notice: this IP address is used for connecting the router, so it need to be same to the router network, at the same time, it cannot be same to the LAN IP address(set at F9.1), otherwise it will not work properly! Please remember this IP address, weighing data will be sent from it.



The LAN IP address mentioned in the above can be found on the AP Interface Setting tab page.



(4)Restart the indicator. When completing these steps, please restart the indicator. The indicator will connect the router automatically.

Connecting a laptop to the router, and on the same network, indicator can be visited on the unique IP address (192.168.0.127) for weighing data and command data. Please refer network application test part for more details.

7 Network Application Test

7.1 TCP Test

4 TCP mode are supported：

F9.4 Continue Output Mode

1 – TCP1, 17 bytes ,no check byte, support command C、T、Z

2 – TCP2, 18 bytes include check byte, support command C、T、Z

F9.5 Command Input Mode

1 – TCP1，support command C,P,T,Z, 1-line print display weight

2 – TCP2，support command C,P,T,Z, 1-line print gross weight, tare weight, net weight

Notice：if use *F9.5 1/2/3/4/5 function, have to set F9.4 = 0-Disable*。

Working in the 4 mode above, as a TCP Server, listen the port set in F9.9, the default port is 1025,the test steps are as follows.

The default parameters in F9 fuction are as follows.

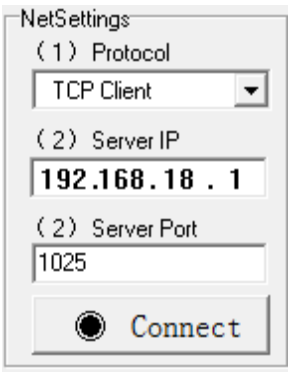
F9.1 IP Address：192.168.18.1

F9.2 NetMask：255.255.255.0

F9.3 Gateway：192.168.0.1

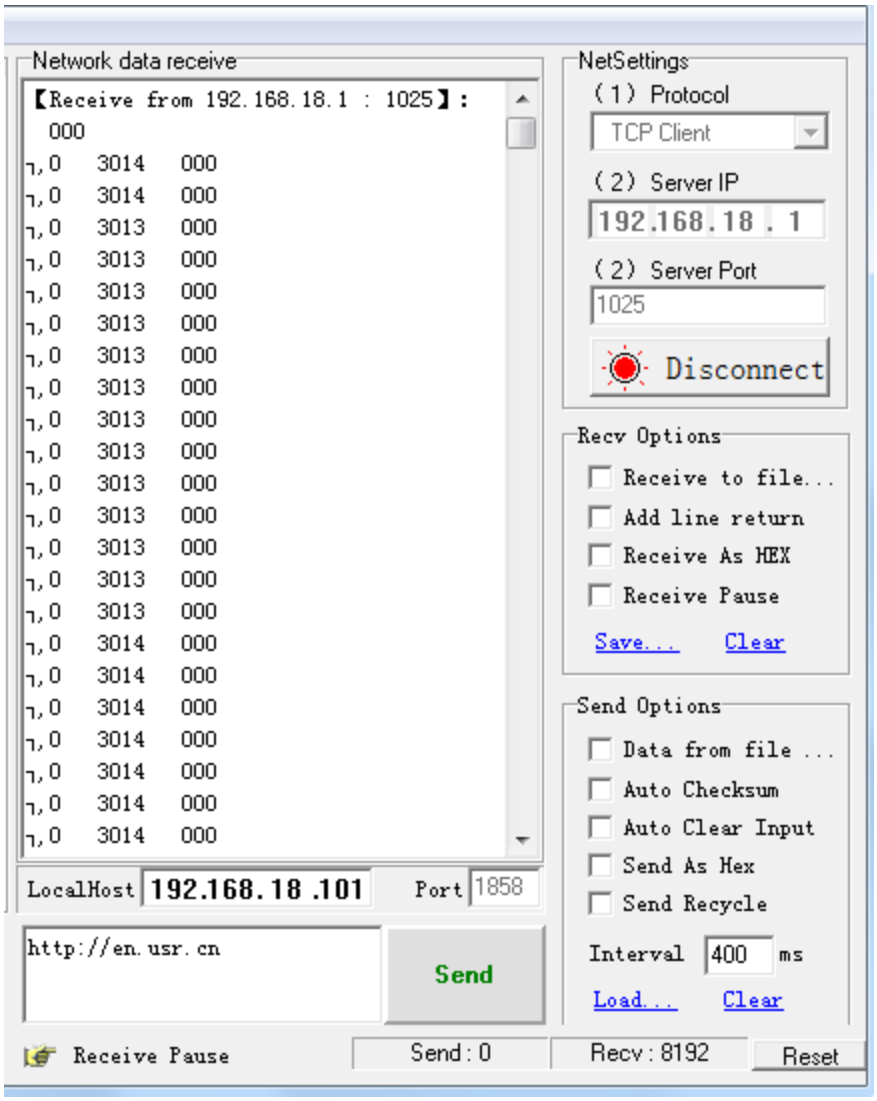
(1)set F9.4 to 1 or 2, and then set laptop or PC IP address to “192.168.18.xxx”,need to be same network to F9.1,but different IP address. Such as “192.168.18.11”. If you test TCP on WIFI application, you don't need to set the IP address of your computer.

(2)open the net test software, set the protocol to “TCP Client”, “Server IP” 192.168.18.11，“Server Port” 1025.



(3)Click “Connect”, connection is established. Weighing data is received in the window. Send character “T”, “C”, “Z” to the indicator, it will implement Tare, Clear

Tare, Zero respectively.



7.2 UDP Test

Four UDP modes are supported as follow.

F9.4 Continue Output Mode:

3 – UDP1,17 bytes ,no check byte, support command C、T、Z

4 – UDP2,18 bytes include check byte, support command C、T、Z

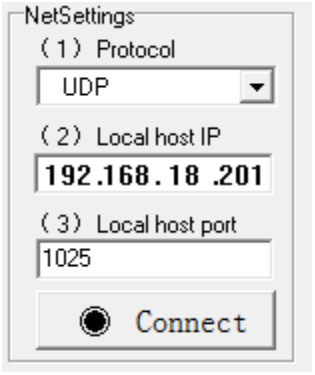
F9.5 Command Input/Output Mode:

3 – UDP1，support command C,P,T,Z, 1-line print display weight

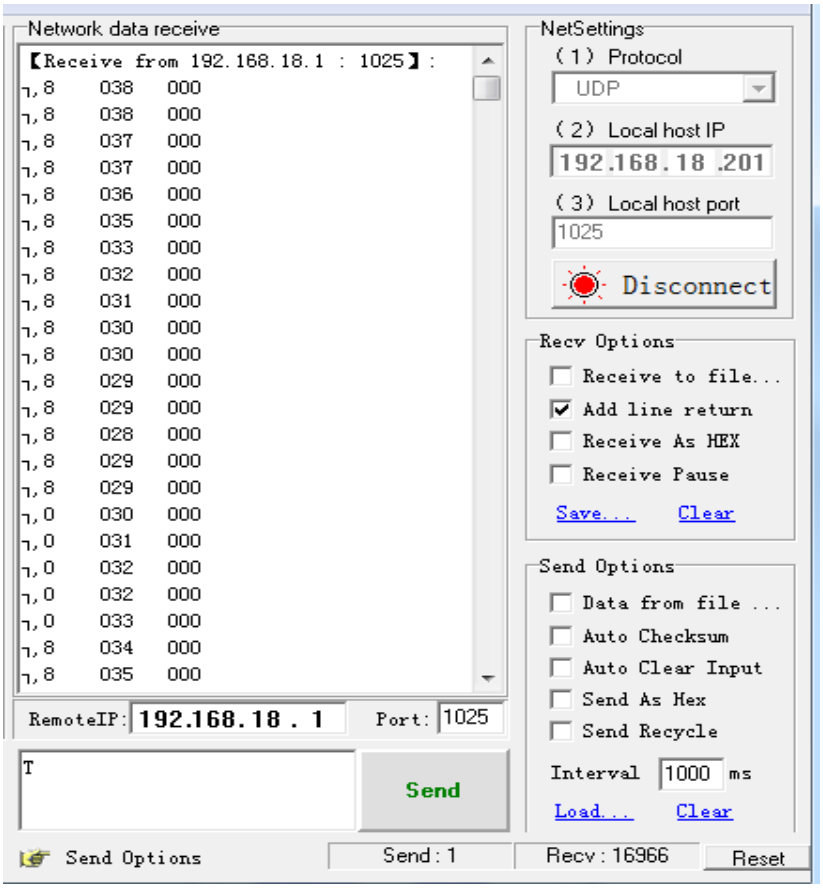
4 – UDP2，support command C,P,T,Z, 1-line print gross weight, tare weight, net weight

(1)set F9.4 to 3 or 4, and then set laptop or PC IP address to “192.168.18.201”,this IP address is same to F9.7(UDP Target Address).

(2)open the net test software, set “Protocol” to UDP, the “Local host IP” is same to F9.7, the “Local host IP” is same to F9.9.



(3) Click “Connect”, connection is established. Weighing data is received in the window. Send character “T”, “C”, “Z” to the indicator, it will implement Tare, Clear Tare, Zero respectively.



Notice: In WIFI application, if you work in STA mode, involved in the above steps , the remote host IP address is not the F9.1 address of the instrument's IP, but the static IP address set in Section 6.2 (192.168.0.127).

8 Barcode Scanner and Label Printer Application

8.1 Barcode Scanner Application

ID226 support both barcode scanner and label printer at the same time. Barcode support up to 20 characters.

The barcode format : barcode+0x0D/0x0A . such as: the hex string

“31 32 33 34 35 36 37 38 39 0D” means the barcode is “123456789”.

F4.1 is configured as 11 to support barcode scanner input and label print function

Indicator get barcode data from serial port RXD, and then automatically print barcode, weight data, date and time to label. Or press print key or external print command to trigger print label. Refer below labels supported.

Set F9.4=0.F9.5=5 to support that output weight data through Wifi/ETH

Or Set F7.1=8 to support that output weight data through Bluetooth

The output data(display weight) format is；

Sign	Weight data	Unit	Connect sign	SN	End
1 byte	6/7 byte	2 byte	1 byte	N byte	2 byte

e.g.:+ 2.00kg+12345678910，means display weight 2.00kg,SN is 12345678910

The output data(net weight,gross weight,tare weight) format is:

Net sign	Net data	Gross sign	Gross data	Tare sign	Tare data	Unit	Connect sign	SN	End
1 byte	6/7 byte	1 byte	6/7 byte	1 byte	6/7 byte	2 byte	1 byte	N byte	2 byte

e.g.: + 2.00+ 2.00+ 0.00kg+12345678910, means net weight is 2.00, gross weight is 2.00,tare weight is 0.00, the unit is kg, SN is 12345678910

format explain:

Sign: ‘+’ or ‘-’

Data: weight data, if no dot, 6 bytes, if have dot ,7 bytes, if not enough, fill ‘0’ from left;

Unit: “kg” or “lb”

Connect sign: '+'

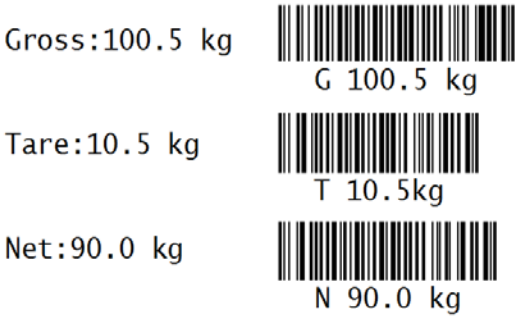
SN: barcode, from serial scanner, or Wifi, Bluetooth input;

End：Hex byte, 0x0D 0x0A

8.2 Label Printer Application

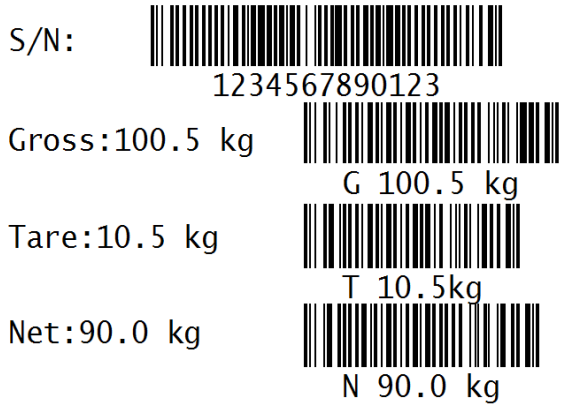
As below labels are supported.

(1) F4.2.2=3，PQ20 printer print gross weight, tare weight and net weight.



Label Size:
100mm x 60mm

(2)F4.2.2=4，PQ20 printer print gross weight, tare weight, net weight and S/N(Serial number get from barcode scanner).

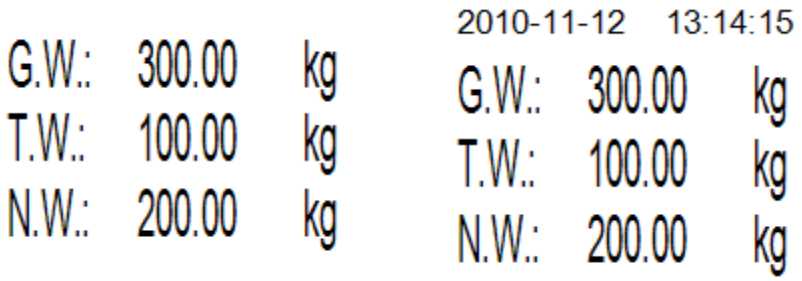


Label Size:
100mm x 60mm

(2) F4.2.2=5，GoDEX Label printer, F4.2.1=0, 1-line print display weight.

Label Size:
60mm x 40mm

(4)F4.2.2=5，GoDEX Label printer, F4.2.1=1, 3-line print gross weight, tare weight, and net weight

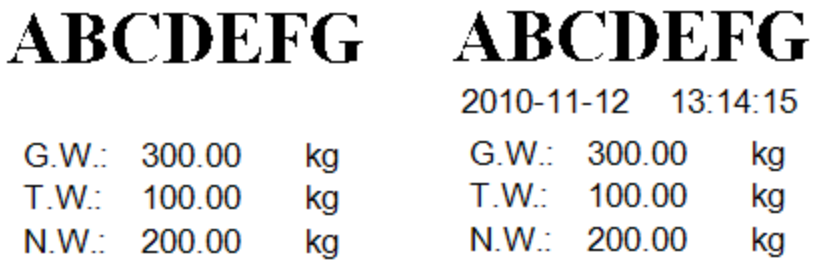


Label Size:
60mm x 40mm

(5)F4.2.2=6，GoDEX Label printer, F4.2.1=0, 1-line print display weight and logo picture

Label Size:
60mm x 40mm

(6)F4.2.2=6，GoDEX Label printer, F4.2.1=1, 3-line print gross weight, tare weight, net weight and logo picture



Label Size:
60mm x 40mm

（7）F4.2.2=7，GoDEX Label printer，print logo picture, display weight ,and its barcode.

Label Size:
60mm x 40mm

（8）F4.2.2=8，GoDEX Label printer，print logo picture, SN and display weight ,and their barcode.

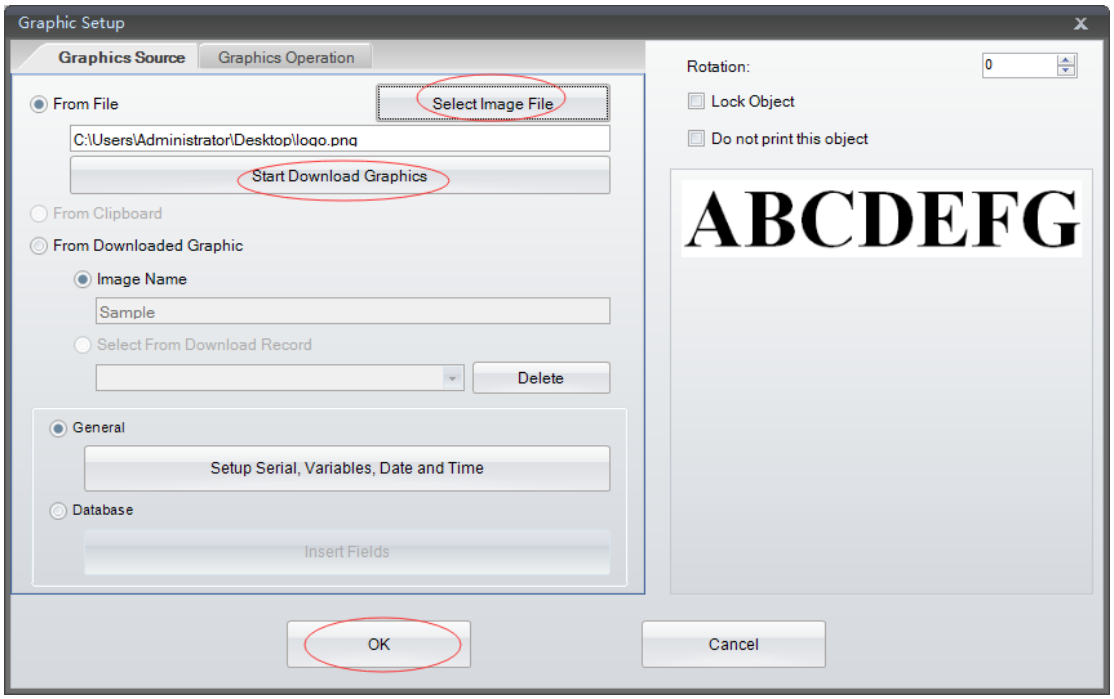
Label Size:
60mm x 40mm

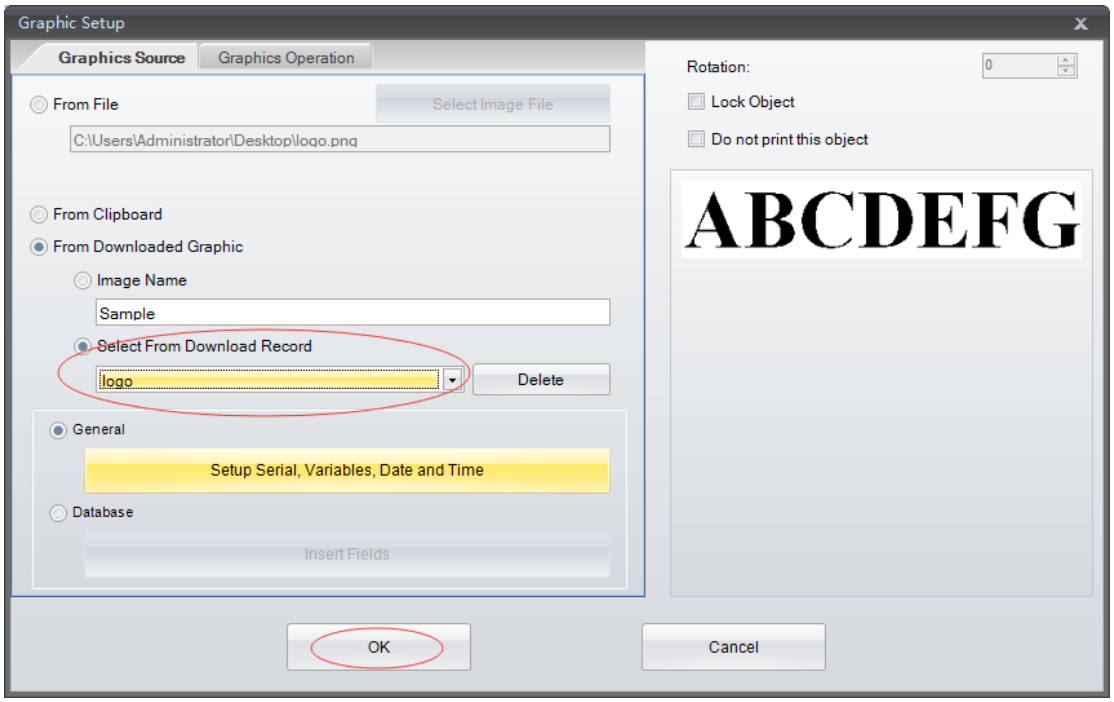
How to download logo picture to GoDEX Label printer?

If F4.2.2=6, logo picture should be download into printer. the logo picture must be named as “logo.png”, and it’s size must be 360 * 70 pixel.

Open ”GoLabel” software tool to download the logo picture, this software tool can be found in the Label Printer CD, following below steps for your updating:

- Connect the PC and Label Printer using a USB cable, and install the printer driver first.
- Open the GoLabel software, click the “Graphics” on the left of the window, and then click the blank label on the right, the Graphic Setup window will be open as follow, then click the button ”Select Image File”, select the logo picture “logo.png”, click the button “Start Download Graphics”, and then click the button “OK”.


Graphic Setup
Graphics Source
Graphics Operation
From File
Select Image File
C:\Users\Administrator\Desktop\logo.png
Start Download Graphics
From Clipboard
From Downloaded Graphic
Image Name
Sample
Select From Download Record
Delete
General
Setup Serial, Variables, Date and Time
Database
Insert Fields
Rotation:
0
Lock Object
Do not print this object
ABCDEFG
OK
Cancel


Graphic Setup
Graphics Source
Graphics Operation
From File
Select Image File
C:\Users\Administrator\Desktop\logo.png
From Clipboard
From Downloaded Graphic
Image Name
Sample
Select From Download Record
logo
Delete
General
Setup Serial, Variables, Date and Time
Database
Insert Fields
Rotation:
0
Lock Object
Do not print this object
ABCDEFG
OK
Cancel

9 Bluetooth Application

Bluetooth function is an option, and the Bluetooth and Ethernet can not be available at the same time.

The default Bluetooth name is ID226, default PIN code is 1234.

Bluetooth support all output functions and input functions supported by serial port COM1 and COM2, except for MODBUS-RTU. Refer setup menu F7.1.

Appendix 1 Error Code

Error Code	Error	Remedy
|¯¯¯¯¯¯¯|	Weight > Maximum Load + 9d	Decrease load
|_____|	Weight below zero 5d	Unload and Press ZERO
|¯¯¯no¯¯|	Out of zero range	Unload weighing platform
EE-2	Not allowed to tare again	Check F1.4.3—ON
--no--	Can not do the key function	
------	In motion	Wait until no motion
EEE -EEE	Power Up Zero Fail	Check platform or adjust zero
EE-3	EEPROM error	Power on again
EE-35	Calibration in motion	Check platform
EE-4	Number of reference parts too small	Put an additional parts
EE-6	EEPROM R/W error	Call Service
EE-70	Keypad error	Call Service
EE-80	Total Counter >9999	Clear Total
Auto Power Off	Battery Voltage too low	Charge
No Display	The fuse is broken	Change the fuse
EE-999	No load cell connected or load cell off	Connect scale or check load cell cable