User Manual

PLTA3+P

INDEX

Attention:

Please read this User's Guide carefully before using the indicator.

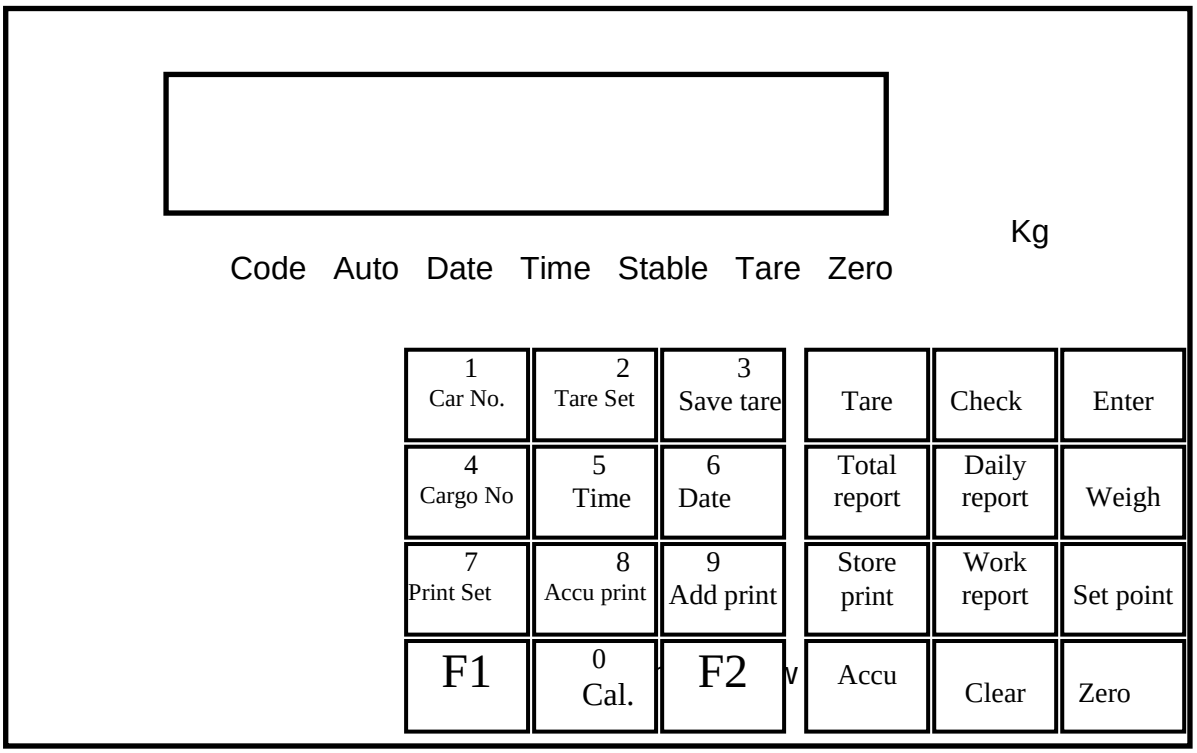
Chapter I. Specification

1. **Model**	PLTA3+ series weighing indicator.
2. Conversion technology	24 bits ∑-Δ A/D.
Input signal range	6mV ~ +22mv , with the protection of anti-lightning strike.
Conversion speed	10 cps
A/D code	16,000,000
None-linearity	< 0.01%F.S
Calibration	With keyboard
Power	DC 5V can connect 8 nos of 350Ω load cell or 6 nos of 700Ω load cell.
3. **Display**	7 Digit 0.8 inch LED , 7 Enunciator LED's
Display cycle	50ms
Division	1/2/5/10/20/50/100 Selectable.
4. **Clock**	Can display day/month/year and second/minute/hour
Precision	± 5minutes/year, not effected by power
5. **Keyboard**	
Number keys	0 ~ 9
Function keys	24 keys (10 keys compound use with number keys)
Material of key	Metal key-press
6. **Large display port**	Serial output method
Communication method	RS232C signal
Data format	10 bits
Baud rate	600/1200/2400/4800/9600 optional
Transmission distance	≤30m
7. **Communication port**	
Communication method	RS232C signal
Baud rate	600/1200/2400/4800/9600 optional
Transmission distance	≤30m
8. **Print port**	
A3+	Standard parallel output port, can connect with LX300 + parallel printer & compatible 24 pin wide line printer
A3+P	Panel printer, Standard parallel output port, can connect With LX300+ Parallel printer &compatible 24 pin wide line printer

9. **Data storage**	1000 Car No. and Tare weight, 1000 cargo No., 1000 group Weighing record
10. **Power**	
A3+: DC	Internal rechargeable battery 6V 4AH
Battery Backup time	About 40-80 hours (After full charge)
Battery charging time	About 8-10 hours
AC adaptor	Input AC : 110-220 V Output DC : 8.0V 500mA
A3+P: Internal power adaptor	Input AC :110-220 V Output DC :70V 6A
DC (optional)	Internal rechargeable battery 6V 12AH
Battery Backup time	About 30-80 hours (After full charge)
Battery charging time	About 8-10 hours
AC adaptor	Input AC : 110-220 V Output DC : 8.0V 1A
11. **Operating condition**	
Operating Temperature	0ºC to 40ºC
Storage/transportation Temperature	-25ºC to 55ºC
Relative Humidity	≤85% RH
Warm-up time	None
12. **Size**	310×195×186 (mm)
13. **Weight**	2.5 kg Approx

Chapter II. Installation

i. Front View of the Indicator



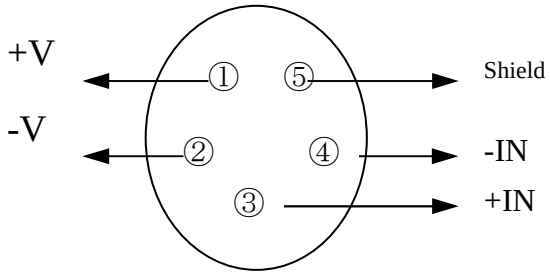
ii. Connecting Load cell to Indicator

1. 5-pin round connector is used for connection of load cell and indicator.
2. 4-core shielded cable is used for Connecting load cells.
3. Precautions for Load cell:

. ▲ ! **Shielded cable must be connected to ground. If indicator is powered on, the user should not insert or withdraws the plug inorder to protect the indicator and load cell.**

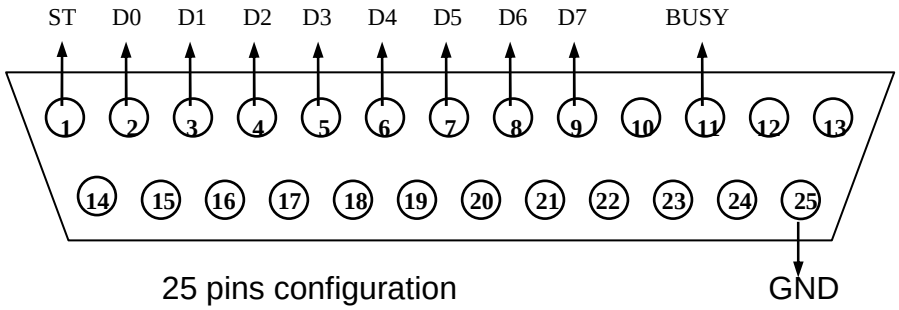
▲ ! **Load cell and indicator are static sensitive devices; you must use anti-static measures.**

Pin specification:



iii. Connecting the External printer to indicator

1. The printer interface with indicator is parallel communication mode.
2. Pin configuration of parallel output port is as follows.
3.



25 pins configuration

Precautions for external printer use:

- **Connect the 25 pins printer cable correctly to the printer.**
- **While Turning ON the system , First Switch ON the indicator, and Switch ON the printer.**
- **While Switching OFF, First Switch OFF the printer , and then Switch OFF the indicator, If used in converse sequence, it may damage the indicator and printer, please take care.**
- **All printers are not compatibles with indicator, Please use the recommended model printers.**
- **Signal GND of the printer should not be connected with the Power GND Otherwise it will damage the indicator and printer.**

Chapter 3: OPERATING INSTRUCTION

i. Power on and auto zero-setting

- Connect the 3-Pin mains cord to AC plug.
- After turning ON the mains switch , turn the indicator on with the switch provided on the indicator.
- After switching ON, indicator will go through self test and display 99999 to 00000 and then go to weighing mode with the display will show **[0.00]**
- Now indicator is ready to use

ii. Manual zero setting:

Press ZERO key to zero any unwanted weight or dust particle left on the platform

iii Manual zero setting:

a) Normal tare:

When Indicator at weighing status, and displaying positive weight stably "Tare " key, indicator will deduct the displayed weight value as tare weight.Then indicator will display net weigh **[0.00]** and Tare sign Enunciator LED is on.

b) Preset tare:

When indicator is in weighing mode, Press "Tare set" key then Display will show **[P *****]** then using numeric keys enter repaired value, then press "Enter" Key then preset tare is stored at this time tare led will be ON and Data will be in net weight mode

iv Press Car No to display tare:

- In weighing mode, press "Car No" key, the indicator will display **[o *****]**
- Now press number key to input the correct Car No,then press "Tare "key, the indicator will find the corresponding tare weight for using in normal weighing condition, can tare continuously, and the tare weight is zero, the tare signal went out.
- when the indicator accord with zero standard,
- press "Zero "also can make tare weight zero ,the tare signal went out.

V Date and Time

- Press "Date "key in weighing mode display will show current date in **[dyy.mm.dd]**
- Format if existing date should be wrong then you can change it using numeric keys will want to exit from date mode,
- then press "enter" key and After pressing "enter "key to exit from
- date mode to weighing mode.Now Display will shows **[weight]**

- Press “Time “key in weighing mode. display will show current time **[hh.mm.ss]**
  If existing value of time is wrong then you can change it by using numeric key
- will want to exit from time mode,press “Enter” key and after
- Pressing “Enter” Now display will show **[weight]**

vi. Internal code

1. Press “Print set ”key, Display will show **[P 0]**
2. Enter 2,8 by using numeric key **[P 28]**
3. Press Enter key , indicator will go to internal counts mode with the Code LED turning ON and display will show **[* * * * * *]**
   or come out to weighing mode with display will show **[**.***]**
   with the Code LED turning OFF

vii Storing the weighing record

1. The indicator **can store total 1000 Car No**, 1000 **Cargo No**
2. The **Car No can be maximum 5 digits,Cargo No can be maximum 3 digits**.
3. After store all record, and then it will print out this (if the print setting is valid).
4. Three method with date storing:
   (1). First store empty Car, then store full Car.or store full Car, then store empty car.That means **two stores structure of record.**
   (2). the full car if already knows the tare weight,One store is enough to structure a total record.
   (3). If just a Cargo not Car, Now one store structure one total record.
   For just clear how to take record, We give you the example
   E g
   1. The Car No should be the number between 00001-99999.hat means 00000 is not a Car No If Car No is 00000, this means just a Cargo not a Car.
   2 If the tare led is on, that means the indicator already has tare weight, so one store can structure a whole record
   3. If the Car No is the five digit number except 00000,And the tare LED should not ON (if under gross weight display condition), that should structure a total record with two stores.

viii. Store operations:

- First remove weight on platform display will shows **[0.00]**
  Then press “Store print” in weighing condition
- Display will show **[weight]**
- Then press “Car No” key display will show **[o *****]**
- Then press **numeric keys to input the Car No it is 5 digit no**

- Then press "Enter" Dislay will show **[hn ***]**
- Then input the **Cargo No by using numeric keys**
  it is 3 digits no. When data is not stable or gross weight <=0 or Net weight is<=0 you can't store

ix: About auto store and print

- Auto-store and print don't have two times store way.
- When auto-store, Between Car No and Cargo No,one have been set Print before storing.
- Auto-store tare weight has three conditions:
  a) If the tare led ON, it will store the current tare weight into the record.
  b) If **tare LED OFF, it will search the corresponding tare weight of Car No automatically in the memory,and store the tare weight in the record.**
  c) If **Tare LED is OFF, and no record in the memory of the tare weight,it will take 0 as the Tare weight**.

X : Accumulating

1 Accumulating operation

- Press "accu " key in weighing condition then display will show **[Accu *]**
- Press " Enter "for further accumulate operation and press "weigh" key exit from accumulate operation After press "Enter" key display will show **[t *****]**
- Finish one times accumulate, Display the total weight after accumulate,
- Pressing any key will exit from accumulate operation.

2 Accumulate clear operation

- After display will show **[At x]**
  Press "Enter"then display will show **[SUrE 0]**
- Then press "1" display will show **[SUrE 1]**
  then clear the accumulate then press "Enter" will come back in weighing condition

3 display the total accumulate result

- After display will show **[At X]**
- press "check" then display will show **[t ****]**
- pressing any key it goes back to weighing mode

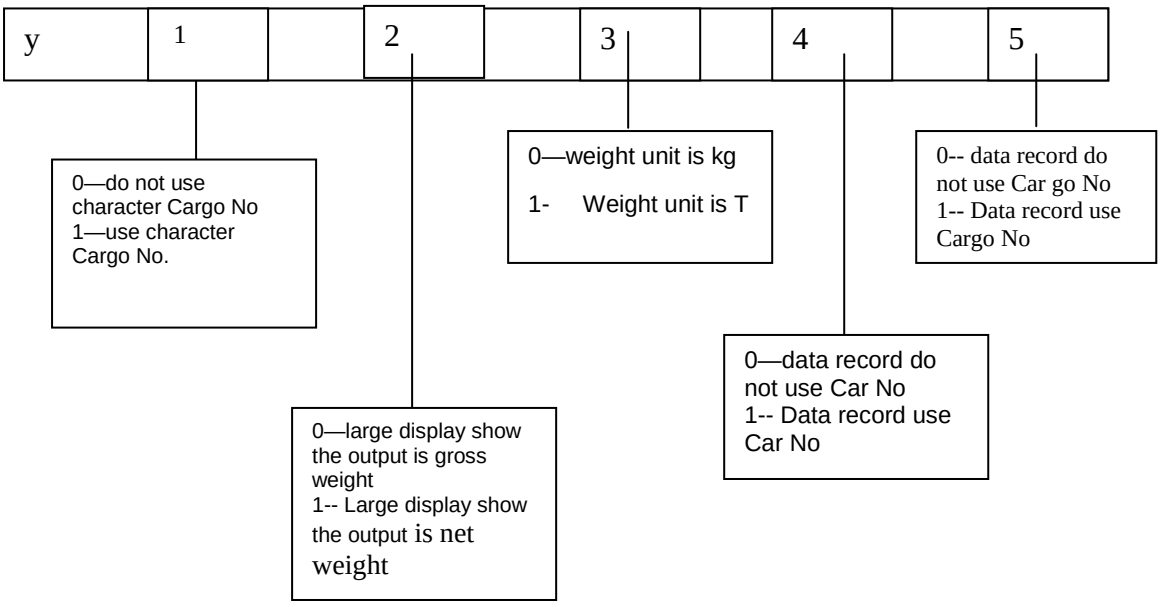
xi . Printing

- Press "Print Set" display will show **[P 0]**
- Enter 9 ,7 by using numeric key and now display will show **[P 97]**
- press "Enter" display will show **[Auto *]**
- Press numeric keys will select Auto/Manual Printing

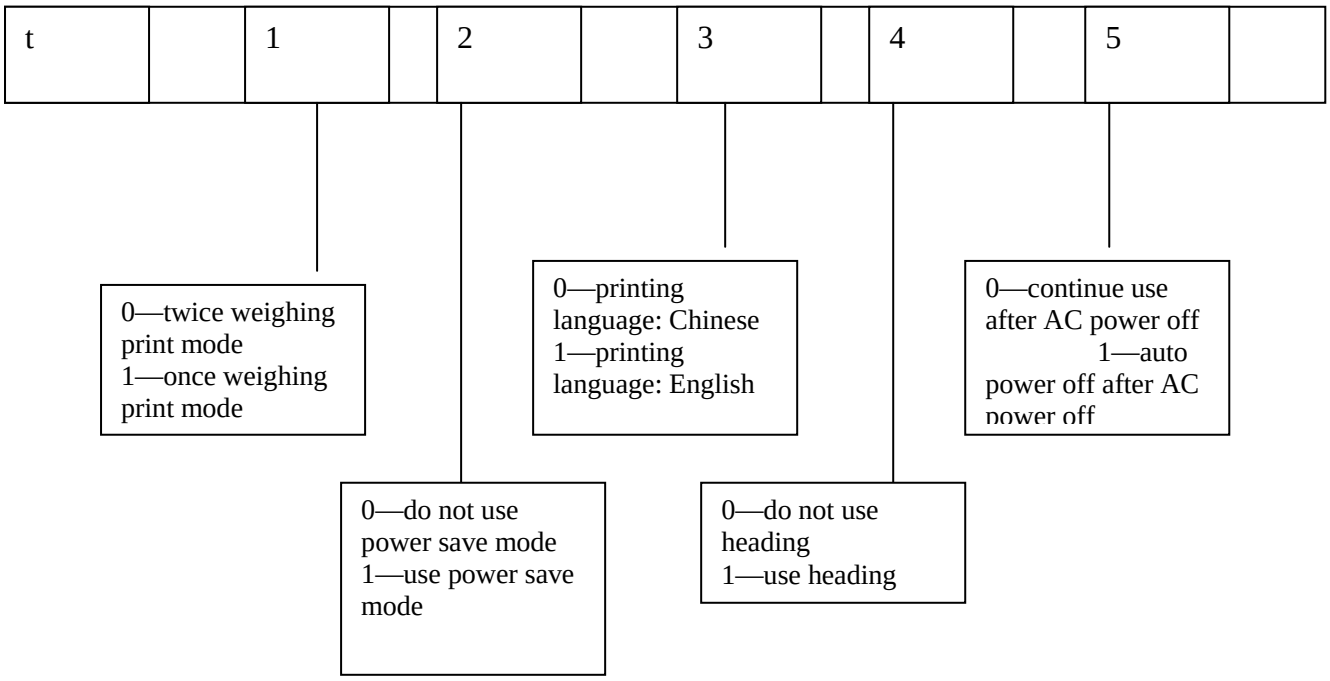
- Specification of numeric keys is as follows
  0-Manual
  1- Auto not zero
  2 Auto after zero
  3 Auto not zero, power on again back to Manual
  4 Auto after zero, power on again back to Manual
  E.g. Press "**1**" then display will show **[Auto 1]**
  It means it will print automatically after weight is go to zero first and then in any weight
- Press" Enter" now display will show **[type x]**
- Select proper mode by using numeric keys press numeric keys for specific operation selection
  it is as follows
  Selecting printer:
  0-invalid printing
  1-Panel printer
  2-EPSON LXI-300 (24 pin parallel printer)
  E g Press "**1**" then display will show **[type 1]**
- Press 'Enter' key is then indicator will select panel printer for printing and Now display will Show **[HL **]**
- Then for selection specific printing restriction use numeric keys
  It is as follows
  0-print only when display returns zero
  25-print only when display <25% F.S.
  50- Print only when display <50% F.S.
  75- Print only when display <75% F.S.
  99 -Print even when it is at F.
  E g for selection, 25% F.S. press 2, 5 then display will show [HL 25]
- After proper operation selection,press "Enter" key display will Show **[Arr *]**
  Then it will be used for Selecting Printing format:
  Arr=0: record format (Print in record)
  1: 1-page format (print in singular format)
  2: 2-page format (Print in two times)
  3: 3-page format (Print in three times)

E g press “2” then display shows **[Arr 2]**

- Pressing “Enter” key display will show **[L *******]**
- the setting of minimum ,Weight is
- for format set will used the numeric keys ,
- L must be over than 10 divisions,After selection of minimum divisions
- press “Enter” now display will show **[y *****]**
- it is 5 bits and specification of every bit is given bellow



- After y operation, pressing” enter” key display will sh **[t *****]**
- selection and operation of 5 digits of t is as follows
- it use only 0 and 1



Filling format can use specialized format non-carbon paper to print same one in three shares soon. Also can use specialized format common paper to print one share soon.

1. **If you need the special format filling print, you can contact with distributors**
2. if will you want print and store process simultaneous **press "store print"to store whole record and indicator will give print of whole record**
3. If because of **some reason (**such as printer has something wrong and so on),**the record haven't** print **out, you can just press "Add Print" to print out. the current saved record**.
4. After weighing, you can press "Accu Print "to print out the accumulative value, the most can display is 999999.

5: Print daily report

- Press "daily report" key Display will show **[rbb 0]**

for daily report format selection you can used-3 numeric keys.

Specification of keys is as follows

1- Print daily report Statistic according to the weighing record

2- Print daily report Statistic according to the Car No.

3- Print daily report Statistic according to the Cargo No.

E.g. Press"2" Display will show **[rbb 2]**

- Press "Enter "display will show **[dyy.mm.dd]**

Enter the date which date record is required to you

- Press "Enter" Display will shows **[int prt]**

and indicator will print the daily report according to rbb value selection of specific Date

6 Print total report

- Press" Total report" Display will show **[Zbb 0]**
- For total report format selection you can use 1-3 numeric keys.

Specification of keys as follows

1 -Print total report Statistic according to the weighing record

2- Print total report Statistic according to the Car No.

3- Print total report Statistic according to the Cargo No.

E.g. Press"1" Display will show **[Zbb 1]**

- Press "Enter" Display will show **[Pr int]**

and indicator print the total report according to Zbb value selection

7 .Print work report

- Press" Work report" Display will show **[bbb 0]**

- for work report format selection you can use 1-3 numeric keys. specification of keys as follows
  1- Print daily report Statistic according to the weighing record
  2- Print daily report Statistic according to the Car No.
  3- Print daily report Statistic according to the Cargo No.

  E.g. Press**"2"**Display will show **[bbb 2]**

- press "Enter"Display will show **[int prt]**
- and indicator print the work report according to bbb value selection
- and Display will show **[SUrE 0]**
- then enter the specific requirement using numeric key 0 and 1 means
  1: means present work report is finished and goes to next work weighing report.
  0: means present work record is not finished and following work record is filling in record.

- After this operation press"Enter" and
- display showing **[******]**
- and exit to weighing scale

Note! Only when the printer is type 2 the record print is valid.

8 If use twice store method that first empty car, full car or first full car then empty car, at the first store the indicator will Display **[LoAd]**

9 For 1.5 seconds to hint you but not print because of the in-complete record.

10 But if you press "Add Print", the indicator can also print out the un-complete record.The print result is always as the following:
① Series number is blank;
② Gross weight and net weight is zero;
Tare weight is the current weight ,Displayed on the indicator.

XII Clear record operation:

Clear all record in the indicator by using “clear” key

Press “clear then display will show **[Sure 0]**

Then press “Enter” then it will clear all record and

now display will show **[weight]**

The record can’t resume after clear, so you should cautions to that to avoid any data loose because of error operation.

1. Clear one day all record

- Press “Check “key display will show **[rEAd 0]**
  Then enter”1” using numeric key and Display will show **[rEAd 1]**
  - Now press “Enter” Display will show **[dyy.mm.dd]**
  - Now press “Clear “Display will show **[SUrE 0]**
  - Press “1” Display will show **[SUrE 1]**
  - press “Enter”Indicator will clear the given date data.
  -

2. Clear recorded data by specified Car No

- Press” Check” key display will show **[rEAd 0]**
- Enter “2” using numeric key and display will show **[rEAd 2]**
- Now press “Enter” display will show **[o *****]**
- Enter proper Car No and then Press “Clear” to clear selected Car No
- Display will show **[SUrE 0]**
- Press “2” Display will show **[SUrE 1]**
- then will press “Enter” Indicator will clear the given car no record

3. Clear recorded data by specified Cargo No

- Press ”Check” key display will show **[rEAd 0]**
- Enter “3” using numeric key, Display will show **[rEAd 3]**
- Now press “enter” Display will show **[hn ***]**
- Press proper cargo no which you will want to delete
- Now press “Clear “display will show **[SUrE 0]**
- Press “3” Display will show **[SUrE 3]**
- Press “Enter” indicator will clear the given Cargo No data.

XIII Checking data

1. Check one day all record

- Press “Check “key display will show **[rEAd 0]**
  Then enter”1” using numeric key and Display will show **[rEAd 1]**
  - press “Enter” then display will show date in **[dyy.mm.dd]**
  - press “Enter” then display will show date in **[no ***]**
  - Press “Enter” Display will show **[thh.mm.ss]**
  - Press “Enter Display will show car no **[0 *****]**
  - Press “Enter Display will show cargo no **[hn ***]**
  - Press “Enter” key Display will show Gross weight **[A *****]**
  - Press “Enter Display will show Tare weight **[t *****]**
  - Press “Enter Display will show Net weight **[n ******]**
  - **E.g**
- Press “Check “key display will show **[rEAd 0]**
  Then enter”1” using numeric key and Display will show **[rEAd 1]**
  - press “Enter” then display will show date in **[dyy.mm.dd]**
  - press “Enter” then display will show date in **[no 001]**
  - Press “Enter” Display will show **[thh.mm.ss]**
  - Press “Enter Display will show car no **[0 *****]**
  - Press “Enter Display will show cargo no **[hn ***]**
  - Press “Enter” key Display will show Gross weight **[A *****]**
  - Press “Enter Display will show Tare weight **[t *****]**
  - Press “Enter Display will show Net weight **[n ******]**
  - press “Enter” then display will show date in **[no 002]**
  - Press “Enter” Display will show **[thh.mm.ss]**
  - Press “Enter Display will show car no **[0 *****]**
  - Press “Enter Display will show cargo no **[hn ***]**
  - Press “Enter” key Display will show Gross weight **[A *****]**
  - Press “Enter Display will show Tare weight **[t *****]**
  - Press “Enter Display will show Net weight **[n ******]**
  - Up to nth value of Press “Enter” key Display will show **[no n]**
  - Press “Enter” Display will show **[thh.mm.ss]**
  - Press “Enter Display will show car no **[0 *****]**

- Press “Enter Display will show cargo no [hn ***]
- Press “Enter” key Display will show Gross weight [A *****]
- Press “Enter Display will show Tare weight [t *****]
- Press “Enter Display will show Net weight [n ******]
- Press“Enter” key pressing Display will show and checking will finish [end]

2 **Checking weighing record with Car No**

- Press”Check” in weighing condition,then display will show [rEAd 0]
- Select[rEAd 2] by using numeric key means checking weight record with Car No [rEAd 2]
- Press”Enter “ key Display will show [o *****]
- enter the proper Car No which you will want to check by
- using numeric key then press “Enter “Display will show [p **.**]
- Press ” Enter” Display will show [no ***]
- Press “Enter” Display will show [dyy.mm.dd]
- Press “Enter” Display will show [thh.mm.ss]
- Press “Enter” Display will show [hn ***]
- Press “Enter” Display will show Gross weight [A *****]
- Press “Enter” Display will show tare weight [t ******]
- Press “Enter “Display will show net weight [n ******]

E.g.

- Press”Check” in weighing condition,then display will show [rEAd 0]
- Select[rEAd 2] by using numeric key means checking weight record with Car No [rEAd 2]
- Press”Enter “ key Display will show [o *****]
- enter the proper Car No which you will want to check by
- using numeric key then press “Enter “Display will show [p **.**]
- Press ” Enter” Display will show [no 001]
- Press “Enter” Display will show [dyy.mm.dd]
- Press “Enter” Display will show [thh.mm.ss]
- Press “Enter” Display will show [hn ***]
- Press “Enter” Display will show Gross weight [A ******]
- Press “Enter” Display will show tare weight [t ******]
- Press “Enter “Display will show net weight [n ******]
- Press ” Enter” Display will show [no 002]

- Press “Enter” Display will show **[dyy.mm.dd]**
- Press “Enter” Display will show **[thh.mm.ss]**
- Press “Enter” Display will show **[hn ***]**
- Press “Enter” Display will show Gross weight **[A ******]**
- Press “Enter” Display will show tare weight **[t ******]**
- Press “Enter “Display will show net weight **[n ******]**
- Up to nth value of records Press “Enter” key Display will show **[no n]**
- Press “Enter” Display will show **[dyy.mm.dd]**
- Press “Enter Display will show car no **[thh.mm.ss]**
- Press “Enter Display will show cargo no **[hn ***]**
- Press “Enter” key Display will show Gross weight **[A *****]**
- Press “Enter Display will show Tare weight **[t *****]**
- Press “Enter Display will show Net weight **[n ******]**
- Press“Enter” key pressing Display will show and checking will finish **[end]**

3 checking weight with cargo no:

- Press “Check “key display will shows **[rEAd 0]**
- Checking weight record with cargo no Press”3”by using numeric key Display will show **[rEAd 3]**
- Press “Enter” key Display will show **[hn ***]**
- Enter the proper cargo no which will you want to check by using umbers key then Press “Enter “then Display will show **[n ***]**
- Press “Enter” key Display will show car no **[0 *****]**
- Press “Enter “key Display will show date **[dyy.mm.dd]**
- Press “Enter “key Display will show time **[thh.mm.ss]**
- Press “Enter” key Display will show gross weigh **[A *****]**
- Press “Enter” key Display will show tare weight **[t *****]**
- Press “Enter” key Display will show net weight **[n *****]**

E.g

- Press “Check “key display will shows **[rEAd 0]**
- Checking weight record with cargo no Press”3”by using numeric key Display will show **[rEAd 3]**
- Press “Enter” key Display will show **[hn ***]**
- Enter the proper cargo no which will you want to check

by using umbers key then Press “Enter “then

Display will show [n 001]

- Press “Enter” key Display will show car no [0 *****]
- Press “Enter “key Display will show date [dyy.mm.dd]
- Press “Enter “key Display will show time [thh.mm.ss]
- Press “Enter” key Display will show gross weigh [A *****]
- Press “Enter” key Display will show tare weight [t *****]
- Press “Enter” key Display will show net weight [n *****]
- Press”Enter” key Display will show [n 002]
- Press “Enter” key Display will show car no [0 *****]
- Press “Enter “key Display will show date [dyy.mm.dd]
- Press “Enter “key Display will show time [thh.mm.ss]
- Press “Enter” key Display will show gross weigh [A *****]
- Press “Enter” key Display will show tare weight [t *****]
- Press “Enter” key Display will show net weight [n *****]
- Press “Enter “ key upto nth events Display will show [n n]
- Press “Enter” key Display will show car no [0 *****]
- Press “Enter “key Display will show date [dyy.mm.dd]
- Press “Enter “key Display will show time [thh.mm.ss]
- Press “Enter” key Display will show gross weigh [A *****]
- Press “Enter” key Display will show tare weight [t *****]
- Press “Enter” key Display will show net weight [n *****]
- Press “Enter” key Display will show [End]

And finish the checking operation.

4.Checking records of Car No only:

- Press”Check” key Display will show [rEAd 0]
- Enter”4” by using numeric value Display will show [rEAd 4]
- Press “Enter” display will show [no ***]
- Press”Enter” Display will show [o *****]
- **E.g.**
- Press”Check” key Display will show [rEAd 0]
- Enter”4” by using numeric value Display will show [rEAd 4]
- Press “Enter” display will show [no 001]
- Press”Enter” Display will show [o *****]

- Press “Enter” display will show **[no 002]**
- Press”Enter” key Display will show **[o *****]**
- Upto nth value Press”Enter” key now Display will show **[no n]**
- Press”Enter” key Display will show **[o *****]**
- Press “Enter” key Display will show **[End]**
  And finish the checking of Car No records

XIV . Method to store tare weight in memory

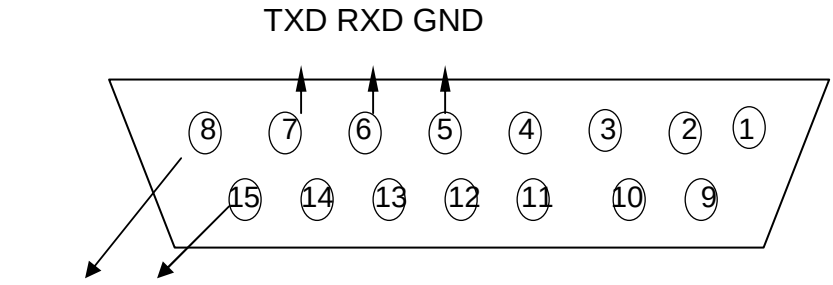
The indicator cans memory 1000 tare weight in long period, there are three enter method:

1. Input tare weight with number key: (*is the default one)
   - Press “Car no” in weighing condition,Display will show **[o *****]**
     then enter “Car no “using numeric keys
     E.g. if press Car no is 12345 then Display will show **[o 12345]**
   - Press “Enter” key Display will show **[P *******]**
     Enter Tare weight by using numeric keys
     Eg if tare weight is ‘1’ display will show **[P 1.00]**
   - then press “Enter “Display will return to weighing mode and storing of tare weight will finished
2. Weight methods to store the tare weight: Under gross weight display status, Let, the empty car on the platform, Press “Save tare” after stabilization then press “Enter “after input Car No.
3. Whenever you store a record, if there isn’t the store tare weight in the memory, the current tare weight will be the store tare weight of the car to store in the memory

XV. Connecting large display to instrument

1. The large display interface will use 15-pins serial communication Connector.

   Large display is connected with RS232C communication signal,



Interfacing of PC and indicator connection should be correct any fault in connection is dangerous to PC and indicator.

Protocol 1: suitable for large display and PC communication

All data is in ASCII code 10 bits data transmission is used in which

1. first bit is start bit and 10th bit is stop bit.
2. 2nd to 7th are weighing data bits,
3. 8th bit is sign bit if negative weight it is '-'otherwise it is empty.

E.g. If Display weight is 100.00kg, Indicator will send: "=00.001 "
if display weight if -35.000kg then Indicator will send "=000.53-".

Protocol 2: only suitable for PC communication

All data is ASCII code, every set of which is of 10 bits:

1. the 1st is starting bit,
2. the 10th is stop bit,
3. inbetween are 8 data bits.

Communication modes for this is as follows

(1). **Sequential mode:**

The transmitted are present gross weight data Each frame is composed of 12 sets of data. format for this is as follows:

Byte No.	Description
1	02(XON) start
2	+ or - symbol bit
3	Weighing data high bit
:	Weighing data :
:	Weighing data :
8	Weighing data low bit
9	Decimal digits right to left(0~4)
10	XOR verify high 4 bits
11	XOR verify low 4 bits
12	03(XOFF) end

(2). Instruction mode:

Indicator transmits corresponding data according to Instruction of the connected computer. Every time when the connected computer delivers an instruction, the instrument will transmit a frame of data

Byte No.	Description	
1	02(XON)	start
2	A~Z	address No.
3	A~E	Instruction A: handshaking Instruction B: read gross weight Instruction C: read tare Instruction D: read net weight Instruction E: get truck No. Order F: get cargo No.
4	XOR verification	high 4 bits
5	XOR verification	low 4 bits
6	03(XOFF)	end

Transmitted content from indicator:

Byte No.	Description	
1	02(XON)	start
2	A~Z	address No.
3	A~F	Instruction A: handing Instruction B: send gross weight Instruction C: send tare Instruction D: send net weight
4	Transmitting corresponding data according to instruction	
….	Transmitting corresponding data according to instruction	
n-1	Transmitting corresponding data according to instruction	
N	Transmitting corresponding data according to instruction	
n+1	XOR verification	high 4 bits
n+2	XOR verification	low 4 bits
n+3	03(XOFF)	end

Hereunder is the 4-n content while data is transmitted from indicator:

Instruction A	No data	Each frame is composed of 6 sets data
Instruction B	Gross weight, format a : symbol (+ or -) b : gross weight(6 bits) (from down upward) g : h : decimal digits from right to left(0~4)	Each frame is composed of 14 sets data
Instruction C	Tare , format: a : symbol (+ or -) b : tare (6 bits) … (from up downward) g h : decimal digits from right to left (0~4)	Each frame is composed of 14 sets data
Instruction D	Net weight, format: a : symbol (+ or -) b : net weight data (6 bits) …. (from up downward) g h : decimal digits from right to left (0~4)	Each frame is composed of 14 set data

Remarks: XOR verification sum high/low 4 bits confirmation:

i) If XOR verification sum high/low 4 bits ≤9: add 30h to become ASCII, and then sent out when XOR verification sum high 4 bits=6, add 30h, then become 6 in ASCII and sent out.

ii) if XOR verification sum high/low 4 bits >9, add 37h, then become ASCII to be sent out. For example: When XOR verification sum high 4 bits=B, add 37h, then become 42h, i.e., B of ASCII to be sent out.

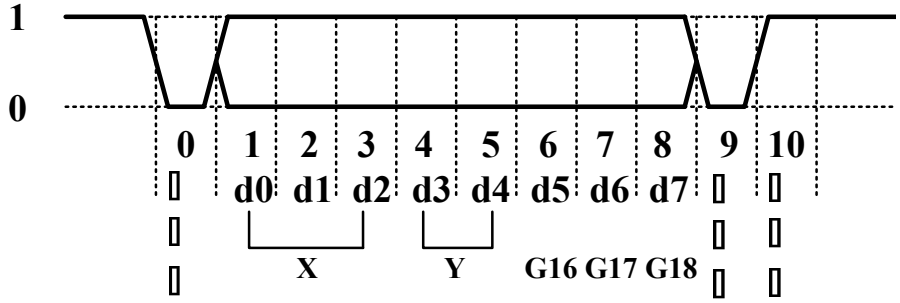
Protocol 3: only suitable for large display communication

Each frame data have 11 bits

ii) 1 start bit 0
iii) 8 data bit low in front
iv) 1 symbol bit
v) 1stop bit 1,

Each group data with 3 frame data, meaning as following

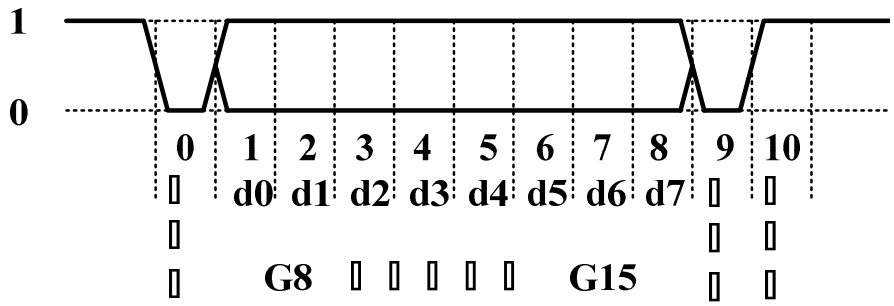
a) First frame



□2□7□1□

1—start bit, 9---symbol bit, 10—stop bit

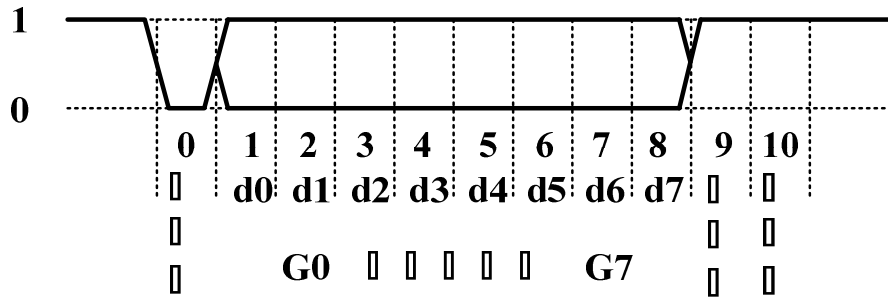
b) Second Frame



□2□7□2□

1—start bit, 9---symbol bit, 10—stop bit

c) Third frame



1—start bit, 9---symbol bit, 10—stop bit

First frame data symbol bit 0

X:	D0, D1, D2	-	Decimal point site (0-4)
Y:	D3	-	Weight symbol (1-0)
	D4	-	Standby
G18:G16		-	Weight data

Second frame data, data symbol bit 0

G15:G8 - weight data

Third frame data, data symbol bit 1

G7: Go - weight data

G0:G18 - from low to high 19 bits binary code for weight (N.W)

iii) .Communication parameter setting

(1) Communication parameter

Parameter is composed of 3 sets of parameters:

I. communication address,
II. baud rate,
III. communication mode.

(2) Connect the load cell to the Indicator & then Switch ON the Indicator, while in Normal weighing mode Plug-in the 15 Pin D-Connector

(Male) on the Indicator back.

(3) Communication parameter setting step:

- Press “Cal” key display will show. **[c 0]**
- Press “5” (by default calibration passwords is 5) then Display will show **[c 5]**
- press “Enter” Then display will show **[E ***]**
- Press “Enter” to goes next step
- After pressing “Enter” display will show **[dc *]**
  for using numeric keys setting the parameter
- Press” Enter” key
- And display will show **[F *****]**
  Press only “enter” key for going to next statement.
- Now Display will show **[pn ****]**
- Press only “enter” key for going to next statement.
- Now Display will show **[Adr *]**
- And value of address can be changing from 1 to 26 by using numeric value after proper selection press ‘3’ then indicator will go to be show **[Adr 3]**
- in baud rate mode and
- Display will show **[btc *]**
- Press only “enter” key for going to next statement Now Display will show **[tfc *]**
- press “Enter” then display will show **[tfc *]**
- Press only “enter” key for going to next statement. Now Display will show **[btd *]**
- press” enter” now display will show **[tdf *]**
- Press only “enter” key for going to next statement. Now Display will show **[flt *]**
- Press only “enter” key for going to next statement. Now Display will show **[y *****]**
- Press only “enter” key for going to next statement. Now Display will show **[t *****]**
- Press only “enter” key for going to next statement. Now Display will show **[b *****]**
- Press only “enter” key for going to next statement. Now Display will show **[c *****]**
- Press only “enter” key for going to next statement.

Now Display will show **[n ***]**

- Press “Weigh” key display will come back in the weigh mode and communication completed

iv. Communication protocol

Precaution in connection and installation of Communication port

- **Make sure that communication interface output port Of indicator and computer input port should be Connected correctly .something wrong with connection, damage will happen to output port of indicator and input port of computer**
- **Necessary computer technology and programming expertise is required for computer communication, which should be carried out by professionals.**

XVI. Thermal printer operation

1. **Modification for printing darkness’**

In weighing mode, press “Check “key, display will show **[rEAd. 0]**
Press “F2” to enter into darkness modification interface, display will show **[GrAy. *]**
1-9’, press number key to modify, and “Enter” to confirm

Note: this function is available just for A3+P, it will reduce the life of thermal printer if set high

- Printing darkness. Pls modify under Professional instruction, the default setting is (Default setting is 5)

2. Modification of machine speed

- In weighing mode, press “Check” key, Display will show **[ReAd. 0]**
- Press “Set point” to enter into machine speed modification interface **[notor]**

0-99, press number key and “Enter”to confirm. the speed after modification is (1+N) /100.as times as default setting, N is the data of imputing

E.G. Press”0 to 99 number if Press”22” Display will show **[notor 22]**
Press “Enter”come back to weighing mode Display will show **[*****]**

Note: this function is available for A3+P, adjust printing speed to solve Printer jam problem when temperature falling down, please Increasing printing darkness when reducing printing speed.

3. Thermal printer paper feed

In weighing mode, press “F2”to execute this operation.

chapter 4 Maintenance and Announcements

1. To guarantee the clarity and using life, the indicator shouldn't be placed directly under sunshine and should be placed in the plain space .
2. The indicator should avoid dust pollution, vibration and moisture.
3. Load cell should connect with indicator reliably, and the system should be connected into ground properly. The indicator must be detected from high electrical fields.
   - **! In order to protect the operator, indicator, and relevant device, you should mount lightning rod in thunderstorm frequently happening area.**
   - **! Load cell and indicator are static sensitive devices, you must adopt anti- static measures.**
4. It is strictly forbidden to clean the case of indicator with intensive solvents (for example: benzene and nitro oils)
5. Liquid and electrical conducting particles should not pour onto the indicator, otherwise the electronic components will be damaged and electric shock is likely to happen.
6. You should cut off power supply of indicator and relevant device before you pull-in and out the connecting line of indicator and external device.
   - **! You must cut off power supply of the indicator , before you plug the connecting line of the load cell in and out.**
   - **! You must cut off power supply of the indicator and the printer, before you plug in connecting line of the printer.**
   - **! You must cut off power supply of the indicator and the large display, before you plug connecting line of the large display in and out.**
   - **! You must cut off power supply of the indicator and the master computer, before you pull connecting line of communication in and out.**
   - **! You must cut off power supply of the indicator and external connecting system, before you pull connecting line of control output in and out.**
7. The user should return this indicator to our company for repair. Non-weighing manufacturer should not repair it, or by you, otherwise further destruction may occur.
8. From invoice date, the indicator has a total one-year free repair period. If any non-artificially obstacle about the indicator occurs while under correct using conditions within the period, the user is allowed to send the product with its guarantee card (of the correct number) back to our corporation for free repair.
9. The indicator shouldn't be taken apart, otherwise free guarantee will be cancelled.

Chapter V Errors and Information

i. Normal information

1 [……] Wait a moment, and this is a normal display.

2 [**Prnt**] Wait a moment, the data are being transmitted between indicator and printer.

3 [**LoAd**] Storing data, it will indicate for not less than 2 seconds to prompt the operator.

ii. Error information indicating

1 [**–ADC-**] load cell have fault

2 [**–OVF--**] Overload warning, offload some or total loading

3. [**Err 18**] Print limits

4 [**Err 19**] Zero or Negative weight value, can't be printed.

5 [**Err 16**] Date or Time is illegal. Enter right date and time

6 [**Err 09**] This Car No does not exist.

7 [**Err 10**] The Car No restored exceeds 1000.

8 [**Err 17**] Entered value over permitted value, enter value again

9 [**Err 24**] Do not put calibrate jumper under general state

10 [**Err 26**] data CRC checkout wrong,not accepted by indicator, it will use the original data

11 [**Err 27**] the entered data is not legal, enter again

12 [**Err 28**] the entered calibration data is not legal(example-the division is too low), data is not accept by the indicator

13 [**Err 29**] the loading is not enough for calibrate, please enter right data

14 [**Err 30**] wrong calibrate data, please calibrate again

15 [**Err 31**] save tare under Zero or Negative weighing

16 [**Err 32**] daily report form wrong, no that day's data in indicator's EMS memory

17 [**Err 33**] accumulating overload

iii. Wrong connection information indicating

[**Prt-Err**] It means the printer has trouble or is wrongly connected. Push any key to quit, connect the printer again or change the printer.

CHAPTER 6 : Print format

Bill print format for external printer (EPSON LXI-300+)

Weight bill

Serial No.	0001
DATE	2004-07-28
TIME	12.02.31
Car No.	12345
Cargo No.	022
GROSS	2.000(kg)
TARE	0.300(kg)
NET	1.700(kg)

Weight bill

Serial No.	0001
DATE	2004-07-28
TIME	12.02.31
Car No.	12345
Cargo No.	022
GROSS	2.000(kg)
TARE	0.300(kg)
NET	1.700(kg)

Weight bill

Serial No.	0001
DATE	2004-07-28
TIME	12.02.31
Car No.	12345
Cargo No.	022
GROSS	2.000(kg)
TARE	0.300(kg)
NET	1.700(kg)

Record print format

WEIGHT BILL 2004-07-28

Serial No.	TIME	Car No.	Cargo No.	GROSS (kg)	TARE (kg)	NET (kg)
0002	12.03.24	12345	033	2.000	0.300	1.700
0003	12.03.24	00888	033	2.000	0.300	1.700
0004	12.04.11	00888	022	2.000	0.300	1.700
Total	gross weight 8.000(kg)	net weight 6.800(kg)				

print format (finish print within 5 seconds)

WEIGHT BILL	
Operator	
SERIAL No.	123
DATE	2004-07-28
TIME	12 .35 .28
Car No.	
Cargo No.	
GROSS	1580 kg
TARE	80 kg
DISCOUNT	10 %
NET	1350 kg
REMARK	

ii. Appendix 2:Print sample

1. Once tare set print weight bill by hand:

Step	State	operate	display	Explanation
1	Loading cargo	Press [tare set]	[P00.000]	
2	Enter tare set weight	For example [1000]	[P1. 000]	
3		Press [Enter]	[*****]	Subtract the tare weight
4		Press [Store Print]	[o *****]	Original car No.
5	Enter Car No.	For example [00123]	[o 00123]	If need original car No., directly press [Enter]□No need to change the car No.
6		Press [Enter]	[hn **]	Original Cargo No.
7	Enter Cargo No.	For example [11]	[hn 11]	If need original cargo No., directly press [Enter]□No need to change the cargo No.
8		Press [Enter]	[Prnt]	Print weight bill

2. Once direct print the cargo weight bill by hand

Step	State	operate	display	Explanation
1	Loading cargo	Press [Store Print]	[o *****]	Original car No.
2	Enter “0”	For example[0]	[o 00000]	“0”car No. means weigh the cargo
3		Press [Enter]	[hn **]	Original Cargo No.
4	Enter Cargo No.	For example [11]	[hn 11]	If need original cargo No., directly press [Enter]□No need to change the cargo No.
5		Press [Enter]	[Prnt]	Print weight bill

3. Print weight bill:□save twice, empty first then laden car or laden first then empty car□

Step	State	operate	display	Explanation
1	Empty car on scale	press[Store Print] after stable	[o *****]	Original car No.
2	Enter new car No.	For example [00123]	[o 00123]	If need original car No., directly press [Enter]□No need to enter new car No.
3		Press [Enter]	[hn **]	Original Cargo No.
4	Enter new cargo No.	For example[11]	[hn 11]	If need original cargo No., directly press [Enter]□No need to enter new cargo No.
5		Press [Enter]	[LoAd]	Exit to weighing sate after 1.5 seconds
6	Laden car on scale	press[Store Print] after stable	[o 00123]	car No. entered in step 2
7		Press [Enter]	[hn 11]	cargo No. entered in step 2
8		Press [Enter]	[Prnt]	Print weight bill

Note□ if the step 1 is laden car, then step 6 will be empty car. Other step are the same

4.Tare set and auto print weight bill

Step	State	operate	display	Explanation
1		Press [Print set]	[Auto *]	Select 1for auto print
2		Press [1]	[Auto 1]	
3		Press [weigh]	[type *]	Following no need to change
4		Press [weigh]	[0000]	Exit to weighing state
5		Press [tare set]	[P ***]	
6	Enter tare set	Enter for example [100]	[P O0100]	
7		Press [Enter]	[-100]	
8	Laden car on scale□wait for stable signal light on□		[400]	Laden car weight 500□subtract net weight 100
9			[Prnt]	Auto print weight bill

5. Load the tare according the car no. and print weight bill

Step	State	operate	display	Explanation
	Tare and car No. is set already			Indicator have saved up
1	Laden car on scale□wait for stable signal light on□	Press [car No.]	[o *****]	Original car No.
2	Enter the needed car No.	For example [00123]	[o 00123]	If car No. is correct, directly press [tare]□No need to enter new car No.
3		Press [tare]	[***]	Subtract the saved tare weight
4		Press [Store print]	[o *****]	Right car No.
5		Press [Enter]	[hn **]	Original cargo No
6	Enter new cargo No.	For example [11]	[hn 11]	If cargo No. is correct, directly press [tare]□No need to enter new cargo No.
7		Press [Enter]	[Prnt]	Print weight bill
8	Display negative	Press [tare]	[000]	Exit to weighing state

6.Enter tare set for many cars and print weight bill by hand:

Step	State	operate	display	Explanation
1		Press [car No.]	[o *****]	Original car No.
2	Enter new car No.	For example [00123]	[o 00123]	If need the original car No., directly press [Enter]□no need to enter new car No.
3		Press [Enter]	[P *****]	Tare set
4	Enter tare set	For example [100]	[P 100]	
5		Press [Enter]	[000]	Exit to weighing state
	Store many cars tare set	……	[……]	Set may cars' tare. Step

				1□5
6	Laden car on scale□wait for stable signal light on□	Press [car No.]	[o *****]	Original car No.
7	Enter the needed car No.	For example [00123]	[o 00123]	If car No. is correct, directly press [tare]□No need to enter new car No.
8		Press [tare]	[***]	Subtract the saved tare weight
9		Press [Store print]	[o *****]	right car No.
10		Press [Enter]	[hn **]	Original cargo No.
11	Enter new cargo No.	For example [11]	[hn 11]	If cargo No. is correct, directly press [tare]□No need to enter new cargo No.
12		Press [Enter]	[Prnt]	Print weight bill
13	Display negative	Press [tare]	[000]	Exit to weighing state(car move away)

iii. Appendix 3

Daily report 1 **date:**2004-07-28

Serial No.	TIME	Car. No.	Cargo No.	GROSS(kg)	TARE(kg)	NET(kg)
0002	12.03.24	12345	033	2.000	0.300	1.700
0003	12.03.24	00888	033	2.000	0.300	1.700
0004	12.04.11	00888	022	2.000	0.300	1.700
Total□	gross weight□8.000(kg)		net weight□6.800(kg)			

Daily report 2 **date**□2004-07-28

Serial No.	Car. No.	Car weight (kg)	times	Total weight(kg)	Total net weight (kg)
0001	12345	0.300	0002	4□000	3□400
0002	00888	0.300	0002	4□000	3□400

Daily report 3 **date**□2004-07-28

Serial No.	Cargo No.	times	Total net weight(kg)
0001	022	0002	3.400
0002	033	0002	3.400

Work report 1 **date**□2004-07-28

Serial No.	TIME	Car. No.	Cargo	GROSS(kg)	TARE(kg)	NET(kg)
0001	12.03.24	12345	033	2.000	0.300	1.700
0002	12.03.24	00888	033	2.000	0.300	1.700
0003	12.04.11	00888	022	2.000	0.300	1.700
Total□	gross weight□8.000(kg)		net weight□6.800(kg)			

Work report 2 **date**□2004-07-28

Serial No.	Car. No.	Car weight (kg)	times	Total weight(kg)	Total net weight (kg)
0001	12345	0.300	0002	4□000	3□400
0002	00888	0.300	0002	4□000	3□400

Work report 3 **date**□2004-07-28

Serial No.	Cargo No.	times	Total net weight(kg)
0001	033	0002	3.400
0002	022	0002	3.400

Total report 1

Serial No.	TIME	Car. No.	Cargo No.	GROSS(kg)	TARE(kg)	NET(kg)	Serial No.
0001	2002-06-26	08.04.40	12345	011	20.00	1.00	19.00
0002	2002-06-26	09.20.05	13456	022	20.00	2.00	18.00
0003	2002-06-26	10.20.50	32345	033	20.00	2.00	18.00
Total□ gross weight□60.00 (kg) net weight□55.00 (kg)							

Total report 2

Serial No.	Car. No.	Car weight (kg)	times	Total weight(kg)	Total net weight (kg)
0001	23456	5.00	0003	58.00	28.00
0002	34567	3.00	0003	58.00	28.00
0003	12356	6.00	0003	58.00	28.00

Total report 3

Serial No.	Cargo No.	times	Total net weight(kg)
0001	011	0003	28.00
0002	022	0003	28.00
0003	033	0003	28.00

Total report 4

Serial No.	Car No.	Gross weight(kg)
0001	12456	5.00
0002	23567	8.00
0003	31235	9.00

Print out of panel printer

Print 1:

[Total Report] [Zbb 1] [ENTER]

```
        Total Report 1
                          2009-12-31
NO          CarNo         Cargo
Date                 Time
Gross(kg)  Tare(kg)     Net(kg)

0001         12345         120
09-12-31           02:39:47
5.72          3.32            2.40

0002         12346         123
10-01-02           02:40:35
5.72          0.00            5.72

0003         12359         125
10-01-04           02:40:59
11.44       0.00             11.44
Total Gross     22.88              (kg)
Total Net         19.56              (kg)
```

Total print 2:

[Total print][Zbb 2] [Enter]

```
        Total Report  2
                    2009-12-31
NO          CarNo      CarWeight(kg)
Time        AccGross(kg) AccNet(kg)

0001         12358       3.32
0003          5.72            2.40

0002         12456       0.00
0001          5.72            5.72

0003         50000       0.00
0002          5.72            5.72
```

Total Print 3
[Total print] [Zbb 3] [Enter]

Total Report 3
2009-12-31

NO	Cargo
Time	AccNet(kg)
0001	123
0001	2.40
0002	126
0001	5.72
0003	128
0005	11.47

Total print 4:

[total Print][Zbb 4][Enter]

Total Report 4
2009-12-31

NO	CarNo	Tare(kg)
0001	12345	3.32
0002	12347	5.72

Print format of daily Print

1. Daily Print 1

[Daily Print] [rbb 1] [Enter]

```
                Date Report  1
                          2009-12-31
No          CarNo       Cargo
Date                Time
Gross(kg) Tare(kg)  Net(kg)

0001        20001       200
09-12-29          17:55:28
100.00          0.00          100.00

0002        20002       201
09-12-29          17:59:41
500.00          1.00          499.00

0003        20003       202
09-12-29          17:59:59
 75.080         0.00          75.08
Total Gross         675.080       (kg)
Total  Net          665.080       (kg)
```

Daily report print 2:
[Daily print][rbb 2][Enter]

```
      Date Report  2
                2009-12-31
NO          CarNo     CarWeight(kg)
Time        AccGross(kg) AccNet(kg)

0001        12358     3.32
0002        5.72          2.40

0002        12456     0.00
0001        5.72          5.72

0003        50000     0.00
0001        5.72          5.72
```

Daily Report 3:

[Daily print][rbb 3][Enter]

```
      Total Report 3
                  2009-12-31

  NO           Cargo
 Time          AccNet(kg)

    0001        123
    0001          2.40

    0002        126
   0001         5.72

    0003        128
    0005          11.47
```

Print format of work Report:

1. work report 1

[Work print][bbb 1][Enter]

```
       Total Report 1
                  2009-12-31
NO         CarNo        Cargo
Date             Time
Gross(kg)  Tare(kg)     Net(kg)

0001       12345        120
09-12-31        02:39:47
5.72       3.32         2.40

0002       12346        123
10-01-02        02:40:35
5.72       0.00         5.72

0003       12359        125
10-01-04         02:40:59
11.44      0.00          11.44
Total Gross     22.88          (kg)
Total Net       19.56          (kg)
```

Work Report 2:
[work report][bbb 2] [Enter]

```
        Total Report  2
                    2009-12-31
NO          CarNo      CarWeight(kg)
Time        AccGross(kg) AccNet(kg)

0001        12358      3.32
0003        5.72           2.40

0002        12456      0.00
0001        5.72           5.72

0003        50000      0.00
0002        5.72           5.72
```

Work report 3:
[work print][bbb 3][Enter]

```
        Total Report 3
                    2009-12-31

  NO                Cargo
  Time              AccNet(kg)

    0001            123
    0001              2.40

    0002            126
   0001             5.72

    0003            128
    0005              11.47
```

Accumulate print format
[accu][Enter]

```
Total Gross   200.160
Total Net     199.160
```

Store Print format (weight Bill)

[store print][Enter]

```
        Weight Bill
NO          0001
Date        2010-01-16
Time        02:39:47
Car No      12345
Cargo       120
Gross       5.72      (kg)
Tare        1.00      (kg)
Net         4.72      (kg)
```

1 -page print format
[Arr 1][Enter]

```
        Weight Bill
NO          0001
Date        2010-01-16
Time        02:39:47
Car No      50000
Cargo       120
Gross       100.00    (kg)
Tare        1.00      (kg)
Net         99.00     (kg)
```

2 -page print format
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```
        Weight Bill
NO          0001
Date        2010-01-16
Time        02:39:47
Car No      50000
Cargo       120
Gross       100.00    (kg)
Tare        1.00      (kg)
Net         99.00     (kg)
```

```
        Weight Bill
NO          0001
Date        2010-01-16
Time        02:39:47
Car No      50000
Cargo       120
Gross       100.00    (kg)
Tare        1.00      (kg)
Net         99.00     (kg)
```

3 page print format

Weight Bill
NO 0001
Date 2010-01-16
Time 02:39:47
Car No 50000
Cargo 120
Gross 100.00 (kg)
Tare 1.00 (kg)
Net 99.00 (kg)

Weight Bill
NO 0001
Date 2010-01-16
Time 02:39:47
Car No 50000
Cargo 120
Gross 100.00 (kg)
Tare 1.00 (kg)
Net 99.00 (kg)

Weight Bill
NO 0001
Date 2010-01-16
Time 02:39:47
Car No 50000
Cargo 120
Gross 100.00 (kg)
Tare 1.00 (kg)
Net 99.00 (kg)