Manual for Indicator Panel *E315W*

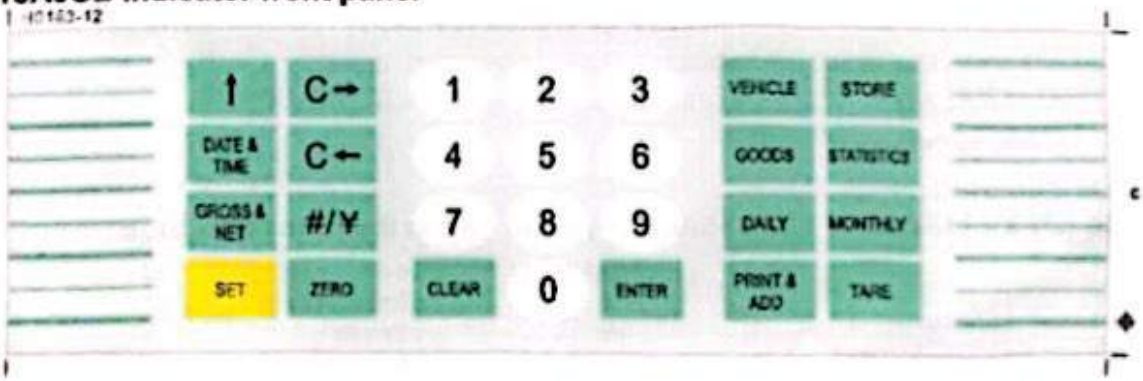
Important:

- **Please read the user's manual carefully before operating the indicator.**
- **Please do not touch the I/O interfaces when the indicator is line-powered.**
- **The signal ground to the indicator must be connected to ensure proper operations of the indicator.**
- **XK315A6 is an AC/DC powered indicator with a rechargeable internal battery. A fully charged battery life is about 4 hours with 8 (750 Ω) load cells connected.**

1Introduction and Specifications

- Simple operation
- Weighing up to 1:30000 divisions
- Excitation voltage: 5V DC, up to 12, 350Ω load cells. up to 24, 700Ω load cells
- A/D resolution: 1.5 million internal counts
- A/D sampling rate: 60 times/second
- Accuracy of measured weight can be temporary increased ten times
- 6-digit, 7-segment with a decimal point, XK315A6(P), XK315A6H(P): 30 mm high LED display, XK315A6G(P), XK315A6GB(P): 20mm high Green LED display
- Real-time clock and programmable date and lock to stop work
- 28 function keys menu driven calibration and configuration
- Selectable display resolution
- Selectable kg and t unit
- Selectable digital filtering
- Four non-linearity calibration points
- Allow changing of indicator without recalibration
- Lock display when overload is greater 130% FS
- Auto zero range
- Store and recall up to 500 vehicle numbers and tares, 1000 weighing records and 10 unit-prices
- Optional built-in micro printout or external 24-pin dot matrix printer
- Selectable manual or automatic printout
- Daily, monthly and statistics reports by time, vehicle or goods number
- RS-232C interface with 2 transmit outputs, selectable baud rate: 1200, 2400, 4800, 9600
- Optional RS-485 interface
- External Power supply options from 187V to 242V, 50Hz ±2%
- Internal rechargeable 6V DC battery
- Operating temperature: 0℃ to 45℃
- Relative humidity: < 85% non-condensing
- Dimensions: 320 mm width x 200 mm high x 180 mm deep

2XK315A6GB Indicator front panel



3Keypad functions

[Vehicle] Stores vehicle number or recall the vehicle records
[Tare] Sets or clears tare[Store] Stores vehicle numbers and tare
[Clear] Clears vehicle number, tare and weighing record
[Set] Enters set menu
[Goods] Stores goods number
[Enter] Confirms the last operation and go to the next step
[Print] Manual printing

[Date/Time]	Displays date and time or set time
[Gross/Net]	Displays gross / net weight
[Zero]	Zero display and sets zero point
[↑]	Scrolls through the available parameter values
[C→]	Recalls unit-price
[C←]	Stores unit-price
[#/¥]	Displays or sets unit-price
[Statistics]	Prints statistics reports
[Daily]	Prints daily reports
[Monthly]	Prints monthly reports

4Status LED

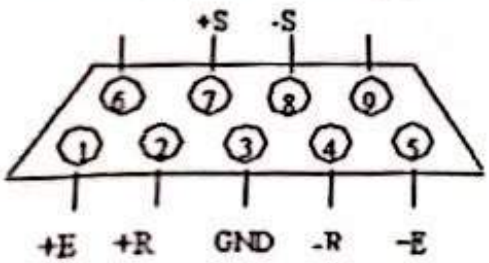
[Zero]	Turns on when gross weight is less than 0.4d
[Tare]	Turns on when tare is not 0
[Auto]	Turns on when indicator is automatically accumulating records or printing
[Stable]	Turns on when the weight on the platform is stable
[Net]	Turns on when net weight is displayed
[Vehicle]	Turns on when vehicle number is stored
[Goods]	Turns on when goods number is stored
[Unit]	Turns on when unit-price is stored

5Error codes

[OU]	Overload due to measured weight > 100% FS + 9d
[-FULL-]	Overload due to measured weight > 100% FS + 30% FS
[-OU]	Initial zero is too low
[–OY–]	Storing of vehicle number and tare is successfully.
[–OY-1]	Vehicle number and tare storage is full (Maximum storage is 100 vehicle)
[–OY-2]	Weighing record storage is full (Maximum storage is 1000 records)
[- c - d -]	Battery failure, mains power not present or voltage too low
[-OFF–]	Battery is low and indicator will power-off to protect the battery from over discharge
[Err 1]	A/D errors due to A/D failure or low A/D counts less than -10% FS
[Err 2]	A/D errors due to A/D failure or high A/D counts greater than 10% FS
[Err 3]	E^2PROM data error

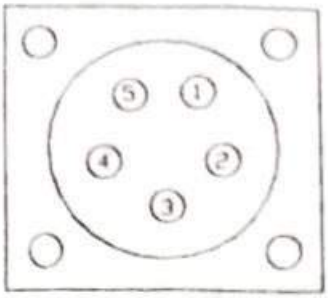
6Technical description

7XK315A6 (P) XK315A6H (P) XK315A6G (P) Load cell to indicator DB9 plug



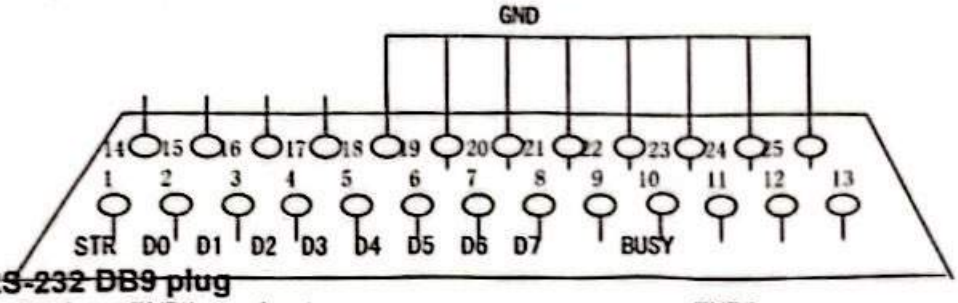
Indicator	load cell
+E	+Excitation
+R	+Sense
-E	-Excitation
-R	-Sense
+S	+Signal
-S	-Signal
GND	GND

8XK315A6GB Load cell to indicator DB5 plug



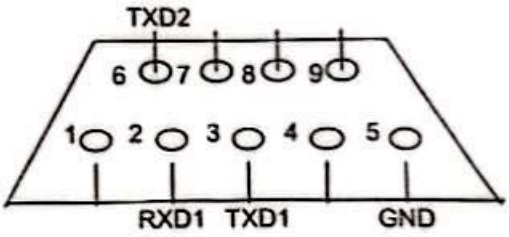
Indicator		Load cell
+E 1	----------	+Excitation
+S 2	----------	+Signal
-S 3	----------	-Excitation
-E 4	----------	-Signal
GND 5	----------	GND 5

9DB25 parallel port 24-pin dot matrix printer connector



10RS-232 DB9 plug

Pin 2	RXD1	Input
Pin 3	TXD1	Output
Pin 5	Signal	GND
Pin 6	TXD2	Output



11Power-on configurations

Switch on On/Off key to turn on the indicator. It may be necessary to press and hold [Set] key for one second to check the software version and perform self-test. After self-test, with no load on the platform, press [Zero] key to zero the display. The display will display [0] and turn on [Zero] LED.

If initial zero is too high, [HHHHHH] is displayed when the indicator is first connected to load cells.

If initial zero is too low, [LLLLLL] is displayed, then followed by [-OU] in about then 1.5 seconds. Make sure that the zero output of load cell is not less than –1% FS.

Before an indicator can be used, its configuration parameters must be set. Press and hold [Set] key and switch on the indicator, the display will display the version number, start counting down to zero and enter the configuration menu.

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters configuration menu
	Press [2003]	[PS 2003]	Password is 2003
2	Press [Enter]	[d 10]	Sets display resolution
			Press [↑] key to cycle through the following options:
			0.01, 0.02, 0.05, 10, 20, 50, 100, 200, 500, 0.10, 0.20, 0.50,
			0.010, 0.020, 0.050, 1, 2, 5, 0.1, 0.2, 0.5
	Press [↑]	[d 1]	Selects d=1
3	Press [Enter]	[--FS--] & [160000]	Sets FS capacity
			Sets the capacity by keying in the FS
	Press [3000]	[--FS--] & [3000]	Displays [--FS--] & [3000]
			Selects FS = 3000
4	Press [Enter]	[Unt 1]	Sets unit: Unt=0 to select kg
	Press [0]	[Unt 0]	Unt=1 to select t
5	Press [Enter]	[t 15]	Sets digital filter parameter: 0 - 99
			The display will update faster and filter faster as the filter parameter is changed
	Press [35]	[t 35]	from 90 to 0
			Selects filter parameter to 35

6	Press [Enter] Press [0]	[mg--2] [mg--0]	Auto zero tracking range is determined by < 0.4 * (1+mg)d mg=2: auto zero tracking range < 1.2d mg=0: auto zero tracking range < 0.4d Factory setting is mg=0
7	Press [Enter] Press [0]	[01-- 1] [01-- 0]	Zero range setting: 01=0: the display can be zero by pressing [Zero] key while the load is less than 2% FS 01=1: the display can be zero by pressing [Zero] key while the load is less than 50% FS Selects 01=0
8	Press [Enter]	[02--3]	Zero range when the display turn on: 02=0: the display will not zero 02=1: the display will not zero while the initial values is less than 2%FS 02=2: the display will not zero while the initial values is less than 10% FS 02=3: the display will not zero while the initial values is less than 20% FS
9	Press [2]	[02--2]	Selects 02=2 If the initial values is less than 10% FS, the display will zero
10	Press [Enter]	[FULL-0]	Locks the display when the scale is overloaded Selects the function with pressing [↑] key FULL=0: the display will not be locked when the scale is overloaded FULL=1: the display will be locked when the scale is overloaded
11	Press [Enter]	[weight]	Returns to weighing mode

12 Zero Display

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters set menu
2	Press [Zero] Press [Enter]	[PS 0] [———] [0]	Sets the zero point with no load on the platform

13 Calibration

14 First point calibration

Step	Operation	Display	Comments
1	Press [Set] Press [8888]	[PS 0] [PS8888]	Enters set menu Calibration password is 8888
2	Press [Enter] Press [1000]	[CAL--1] & [0] [CAL--1] &[1000]	Loads standard weight for 1000 on the platform and wait for Stable LED turn on
3	Press [Enter]	[———] [1000]	Starts first point calibration and wait for calibration to complete Calibrate the other 3 points for more accuracy

15 Displaying and changing calibration parameters

- Modification of calibration values could affect the measured weight.
- $$$$is the new calibration value to be entered into the indicator.

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters set menu
2	Press [5588] Press [Enter]	[PS3388] [--PA--]&[calib-1]	Password is 3388 Displays the old first point calibration value
3	Press [1$$$$] Press [Enter]	[--PA--]&[1$$$$] [weight]	Enters and displays new first calibration value Returns to weighing mode

16 Set and abort display lock

17 Set date to lock display

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters set menu
2	Press [9485 ↑] Press [Enter]	[PS 9485] [00.00.00]	Password is 9485 ↑
3	Press [050820] Press [Enter]	[05.08.20] [PS 0]	Enters the date to lock display Selects 08/20/05
4	Press [1713]	[PS 1713]	Enters a 4-digit password Example password entered is 1713 Password is 0 if [Enter] is pressed without entering a 4-digit password

	Press [Enter]	[weight]	System passwords cannot be entered Returns to weighing mode

Note: When the display is locked, the indicator will display [--PAY--] and non-operational.

18 Abort display lock

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters set menu
2	Press [1713]	[PS 1713]	Password is 1713
3	Press [Enter]	[YAH00]	Aborts the lock and returns to weighing mode.

19 Disable display overload lock

The indicator can be programmed to lock the display when there is an overload. Once the display is locked, it has to be disabled to return to weighing mode.

Step	Operation	Display	Comments
1	Press [Set]	[-FULL-]& [overload] [PS 0]	Display cycles between [-FULL-] and [≥ 130% F·S]
2	Press [77 ! 49]	[PS 7749]	Password to disable overload lock is 77 ! 49
3	Press [Enter]	[weight]	Displays the current weight and returns to weighing mode

- The load cells will be overloaded when the weight on the platform is greater than 10% FS.
- The display will cycle between [-FULL-] and [≥FS + 30% FS] when the weight on the platform is greater than FS + 30% FS in about 2 seconds. The load cells are overloaded and the display will be locked.

20 Changing an indicator without recalibration

- Copy all the configuration values of the old indicator to the new indicator.
- Enter the four calibration points of the old indicator into the new indicator.
- Zero the display and changing of indicator is complete.

21 Display date and set time

Step	Operation	Display	Comments
1	Press [Time/date]	[08.18.36]	Displays current time of the indicator
2	Press [120000]	[12.00.00]	Sets time to 12 o'clock
3	Press [Enter]	[weight]	Returns to weighing mode
4	Press [Time/date]	[05.08.28]	Displays current date
5	Press [Enter]	[weight]	Press [Enter] if date need not be changed and returns to weighing mode

22 Zero

Step	Operation	Display	Comments
1	Weight on platform less than 2% FS	[10]	Weight on the platform is 10 kg
2	Press [Zero]	[0]	Zero LED is turned on

23 Tare

24 Acquire tare

Step	Operation	Display	Comments
1	Empty truck on the platform	[2568]	Displays the tare of the truck
2	Press [Tare]	[0]	Enters the tare of the truck and the Gross and Net LED are turned on

25 Store tare

Step	Operation	Display	Comments
1	Tare state	[0]	The Tare and Net LED are turned on
2	Press [Tare]	[2568]	Returns to weighing mode. The Tare and Net LED are turned on. The display shows the tare values saved

26 Digital tare

Step	Operation	Display	Comments
1	Loaded truck on the platform	[2568]	Displays Gross weight
2	Press [1000]	[1000]	Enters the tare of truck
3	Press [Tare]	[1568]	Displays net weight and the Tare and Net LED are turned on

27 Gross / Net weight

Step	Operation	Display	Comments
1	Loaded truck on	[2568]	Displays Gross weight

	the platform		
2	Press [1000]	[1000]	Enters the tare of truck
3	Press [Tare]	[1568]	Displays net weight and the Tare and Net LED are turned on
4	Press [Gross/Net]	[2568]	Displays Gross weight and the Tare and net LED are turned on

28 Display, store and recall vehicle number and tare

29 Enter vehicle number

Step	Operation	Display	Comments
1	Press [159]	[159]	Enters Vehicle Number
2	Press [Vehicle]	[Weight]	Displays the vehicle number and returns to weighing mode

30 Display vehicle number

Step	Operation	Display	Comments
1	Press [Vehicle]	[369]	Displays the vehicle number and returns to weighing mode

31 Storing tare

Step	Operation	Display	Comments
1	Empty truck on platform	[5678]	Displays tare and gross weight of the truck
2	Press [159]	[159]	Enters vehicle number 159
3	Press [Vehicle]	[- no -]	No record found
4	Press [Store]	[–0Y–]	The first weighing record is stored into memory. If memory is full, the indicator will display [–0Y–]
5		[5678]	Returns to weighing mode

32 Recall tare and vehicle number

Step	Operation	Display	Comments
1	Loaded truck on platform	[9800]	Displays the gross weight of the truck.
2	Press [159]	[159]	Enters vehicle number 159.
3	Press [Vehicle]	[5678] [4122]	Displays the tare and net weight of the truck.

33 Recalls tare and vehicle number

Step	Operation	Display	Comments
1	Truck on platform	[9800]	Displays the gross weight of the truck
2	Press [159]	[159]	Enters vehicle number 159
3	Press [Vehicle]	[4122]	Displays the net weight of the truck and the Tare and Net LED are turned on
4	Press [Gross/Net]	[9800]	Displays the gross weight of the truck

34 Goods number

Step	Operation	Display	Comments
1	Press [Goods]	[F12-34]	Displays former goods number
2	Press [2179]	[F21-79]	Enters new goods number F=21-79
3	Press [Enter]	[weight]	Returns to weighing mode

35 Sets and display unit-price

36 Display summary

Step	Operation	Display	Comments
1	Truck on platform	[1000]	Displays gross weight of truck
2	Press [#/Y]	[-sum-]	Displays the sum of goods

37 Setting unit-price

Step	Operation	Display	Comments
1	Press [#/Y] twice	[y 0.22]	Displays the stored unit-price
2	Press [50]	[y 0.50]	Enters new unit-price (0.50)
3	Press [Enter]	[weight]	Returns to weighing mode

38 Storing unit-price

Step	Operation	Display	Comments
1	Press [#/Y] twice	[y 0.50]	Displays the stored unit-price

2	Press [120]	[y 1 20]	Enters new unit-price 1 20
3	Press [Enter]	[weight]	Returns to weighing mode
4	Press [C→]	[Unp]	
5	Press [5]	[Unp 5]	Stores the 5th unit-price
6	Press [Enter]	[weight]	Returns to weighing mode

39 Recall unit-price

Step	Operation	Display	Comments
1	Press [C→]	[C Unp]	
2	Press [5]	[C Unp 5]	Recalls the 5th unit-price
3	Press [Enter]	[y 1 20]	Displays the 5th unit-price for 2 seconds
		[weight]	Returns to weighing mode

40 Temporarily set indicator to high resolution

Step	Operation	Display	Comments
1		[3000]	In weighing mode
2	Press [Set] [↑]	[3000 0]	Temporarily sets display to high resolution
3	Press [Enter]	[3000]	Returns to weighing mode

41 Printing

Printing can be done from an external parallel port 24-pin dot matrix printer or from the optional build-in micro-printer.

42 Manual printing

Operation	Display	Comments
	[1543]	Displays current weight
Press [Print]	[ ]	Starts printing
	[n 128]	Displays number 128 when printing completes
	[1543]	Returns to weighing mode

43 Automatic printing

Display	Comments
[1543]	Displays current weight
[ ]	Starts printing
[n 128]	Displays number 128 when printing completes
[1543]	Returns to weighing mode

44 Advance paper on the micro-printer

Operation	Display	Comments
	[weight]	Displays current weight
Press [↑] and hold	[ ]	Advances printer paper

45 Statistics

46 Records by total weight

	Display	Comments
Press Statistics]	[1000]	Displays current weight
	[n 126]	Numbers of weighing is 126
	[H 3256]	Total weight's upper 4 digits 3256
	[L 2630]	Total weight's lower 4 digits 2630 and the total weight is 32562630
	[1000]	Returns to weighing mode

47 Statistics by vehicle number

Operation	Display	Comments
	[1000]	Displays current weight
Press [Vehicle] Statistics]	[ ]	Printer prints the sum according to the same vehicle Make sure the vehicle number is entered earlier
	[1000]	Returns to weighing mode after printing

48 Statistics by goods number

Operation	Display	Comments
	[1000]	Displays current weight
Press [Goods] Statistics]	[ ]	Printer prints the sum according to the same goods number
	[1000]	Returns to weighing mode after printing

49 Statistics by Daily reports

Operation	Display	Comments
	[1000]	In weighing mode
Press [Daily] [Statistics]	[ ]	Printer prints the sum according to the daily reports
	[1000]	Returns to weighing mode after printing

50 Statistics by Monthly reports

Operation	Display	Comments
	[0]	In weighing mode
Press [Monthly] [Statistics]	[ ]	Printer prints the sum according to the monthly reports
	[0]	Returns to weighing mode after printing

51 Clear

- When the indicator is in weighing mode and [Clear] key is pressed, it will display [CLEAr].
- Press [Clear] key will clear the numbers entered from the keypad.

52 Clear the latest weighing record

Step	Operation	Display	Comments
1	Press [Clear] [1]	[CLEAr 1]	Clears the latest weighing record from memory
2	Press [Enter]	[weight]	Returns to weighing mode

53 Clear vehicle records and tares

Step	Operation	Display	Comments
1	Press [Clear]	[CLEAr]	
2	Press [vehicle]	[139]	Enters vehicle number
3	Press [Enter]	[weight]	Clears vehicle number and tare record from memory

54 Clear all weighing records

Step	Operation	Display	Comments
1	Press [Clear]	[CLEAr]	
2	Press [Monthly] [Enter]	[weight]	Clears all weighing records

55 Printer options

56 Parallel port printer options (A6, A6H, A6G, A6GB)

Step	Operation	Display	Comments
1	Press [Set]	[PS 0]	Enters set menu
2	Press [Print]	[P1– 11]	Printing options: P1=00: One row format printout P1=01: One record printout P1=02: Two records printout P1=03: Three records printout P1=11: Weighting bill
3	Press [01]	[P1– 01]	Selects P1=01
4	Press [Enter]	[P2– 1]	Auto or Manual printing option: P2=0: Manual printing & accumulation P2=1: Automatic printing & accumulation
5	Press [0]	[P2– 0]	Selects printing option P2=0
6	Press [Enter]	[P3– 0]	Unit-price options: P3=0: kg
7	Press [0]	[P3– 0]	Selects kg unit
8	Press [Enter]	[P4–500]	Printer will not print if the weight is less than selected weight P4=0 Allows printing when the weight is not stable P4=500 Allows printing only when the weight > 500
9	Press [0]	[P4– 0]	Selects P4=0
10	Press [Enter]	[b 2400]	Sets baud rate for RS-232 interface: 1200, 2400, 4800, 9600
11	Press [↑]	[b 4800]	Sets baud rate to 4800
12	Press [Enter]	[weight]	Returns to weighing mode

57 Micro-printer options

Step	Operation	Display	Comments

1	Press [Set]	[PS 0]	Enters set menu
2	Press [Print]	[P1–11]	The format of printing options: P1=00: Prints record by total weight P1=10: Prints record by vehicle number P1=20: Prints record by goods number P1=01: One bill paper P1=02: Two bill paper P1=03: Three bill paper P1=11: One weighing bill form P1=12: Two weighing bill form P1=13: Three weighing bill form
3	Press [01]	[P1–01]	Selects P1=01
4	Press [Enter]	[P2–00]	Manual or Automatic Printing options: P2=00: Manual printing and manual accumulation only when weight is stable P2=01: Auto printing and auto accumulation P2=10: Manual printing and manual accumulation when Weight is not stable
5	Press [10]	[P2– 10]	Selects P2=10
6	Press [Enter]	[P3–0]	See 16.1 Parallel port printer options

58 A/D counts

A/D counts can be viewed to check the load cells wiring. If the A/D counts do not change, check the load cell wiring. Do not proceed until the A/D counts are acceptable. The minimum A/D counts are 55000 and maximum A/D counts are 65000.

Step	Operation	Display	Comments
1	Press [Set]	[0] [PS 0]	
2	Press [Store]	[61252]	A/D counts are 61252
3	Press [Enter]	[0]	Returns to weighing mode

59 Series communication interface

- The RS-232 interface signals TXD1, TXD2, GND are similar to TOLEDO RS-232 interface.
- The RS-485 interface is optional.
- The following LED displays can be connected to the indicator via the RS-232 interface:

Model	CX8M	CX5M-L	CX5M-L SS	CX5M-U	CX5M-E
Digit High(mm)	200	130	130	130	130
Dimension(mm)	900×320×78	780×400×58	780×270×58	780×270×58	670×270×58
Model	CX5M-E SS	CX3M	CX3M SS	CX3.2M	CX1.2M SS
Digit High(mm)	130	82	82	82	30.5
Dimension(mm)	670×270×58	430×180×50	430×180×50	350×180×30	270×120×30

60 Record Printouts

61 Micro-printer printouts

a. records by time

1 8:01 300
2 8:10 2800
3 8:15 3500

b. records by vehicle number

123456 5000 (vehicle number 123456)
345678 5500

c. records by goods number

1 12-01 4000 (goods number 12-01)
2 12-02 3800
3 12-03 4100

d. Daily Reports

2003-03-08 17:00
NO: 56 (number of accumulation)
Add: 220000 kg (total weight)

e. records by total weight

NO: 999 (number of accumulation)
W: 220000 kg (total weight)

f. Monthly reports

2003-03-08 17:10
NO: 999 (number of accumulation)
Add:28820000 kg (total weight)

g. Statistics by vehicle number

2003-03-08 16:50
#: 123456 NO: 3 (vehicle number)
W: 9850 kg (weight of vehicle)

h. Statistics by goods number

2003-03-08 16:50
F: 12-01 NO: 2 (goods number 12-01)
W: 7500 kg (weight of goods)

i. Weighing Bill

j. English weighing bill

Weighing Bill

No.	
Date	
Time	
Vehicle	
Goods	
Gross	
Tare	
Net	
Unit-price	¥
Sum	¥
Remark	

Weighing Bill

No.	1
Date	03-08-12
Time	08:08
Vehicle	1233456
Goods	F12-32
Gross	4500kg
Tare	1000kg
Net	3500kg
Unit-price	0.20 ¥
Sum	700 ¥
Remark	

62 Parallel port printer printout

63 Records

No.	Date	Time	Vehicle	Goods	Gross	Tare	Net	Unit-P	Sum
1	03-05-15	8:01	123456	10-25	4180	1000	3180	1.50	4770.00
2	03-05-15	8:10	567891	20-30	4180	2000	2180	1.70	3706.00
3	03-05-15	8:16	345678	11-23	5600	2200	3400	1.45	4930.00

64 Number of accumulation and total weight

Number of accumulation: 11	Total Weight: 3772.7kg

65 Weighing bill Samples

Weighing Bill kg

Name	
No.	1
Date	2003-03-10
Time	8:02
Vehicle	123456
Goods	10-25
Gross	8200
Tare	3800
Net	4400
Unit-price	1.70
Sum	7480.00

Weighing Bill kg

Name	
No.	1
Date	2003-03-10
Time	8:02
Vehicle	123456
Goods	10-25
Gross	8200
Tare	3800
Net	4400
Unit-price	1.70
Sum	7480.00

Weighing Bill kg

Name	
No.	1
Date	2003-03-10
Time	8:02
Vehicle	123456
Goods	10-25
Gross	8200
Tare	3800
Net	4400
Unit-price	1.70
Sum	7480.00

66 Weighing Bill

Weighing Bill	
No.1	Operator
Company Name and Logo	
Remark	
No.	
Date	
Time	
Vehicle	
Goods	
Gross	
Tare	
Net	
Unit-price	¥
Sum	¥

Weighing Bill	
No.2	
Company Name and Logo	
Remark	
No.	
Date	
Time	
Vehicle	
Goods	
Gross	
Tare	
Net	
Unit-price	¥
Sum	¥

Weighing Bill	
No.3	User
Company Name and Logo	
Remark	
No.	
Date	
Time	
Vehicle	
Goods	
Gross	
Tare	
Net	
Unit-price	¥
Sum	¥