

TIGER

TTA-01

Weighing Indicator

User manual

Version: Oct., 2015



- 1、 Please read this manual carefully before use
- 2、 Please keep this manual properly for reference

INDICATOR USING NOTES

- ▲ Indicator ground wire must be complying with electrical safety regulations, junction box; load cell must be well grounded.
- ▲ Connection between digital load cell and indicator must be reliable, load cell shield wire must be grounded.
- ▲ all cable does not allow plug / unplug when indicator is connecting to power supply, to protect indicator or load cell from electrostatic.
- ▲ Thunderstorm season, system must have reliable lightning protection measures, to protect load cell and indicator.

Make sure operators' safety and weighing equipments running safely.

- ▲ limited using for flammable gas, or flammable vapor areas, or tank system with pressure.
- ▲ keep indicator and load cell away from strong electric magnetic field, corrosive substances and explosive materials.
- ▲ do not sue strong solvents(such as: benzene, nitro-class oil) to clean the cover.
- ▲ do not inject liquid or other conductive particles into indicator.
- ▲ without technical supervision department's promise, no one can open the seals, or calibrate..
- ◆ to ensure indicator display clearly, and work longer, do not use it under direct sunlight, and put it stable.
- ◆ indicator should be away from dust, vibration, wet environment.
- ◆ before plugging/unplugging, pls cut off indicator or other equipments' power.
- ◆ connecting each connector as the manual book.
- ◆ That indicator is precision measuring instrument, to ensure accuracy, do not open it without authorization.
- ◆ exceeding maintenance time, factory should charge for repairing.

1) Technical Parameters:

- ❖ Execute Standard: GB/T 7724-2008
- ❖ Accuracy Class: III, n=3000 error partition coefficient : $\pi = 0.5$
- ❖ Input Sensitivity $\geq 1.2\mu\text{V/e}$
- ❖ A/D conversion mode: $\Delta - \Sigma$ mode, 24bit
- ❖ Load Cell Bridge Voltage: DC 5V, 1-12pcs 350 Ω resistance strain gauge load cell.
- ❖ Load Cell Connection Mode: 6 wires (long distance compensation, about 50 meters)
- ❖ Display 256X64 dot matrix OLED
- ❖ Clock: clock can display year/moth/date, hour/minute/second, auto leap year, leap month,

without effect by power off.

- ❖ Scoreboard interface: Current loop /RS232 output ,baud rate 600bps Transmission distance ≤ 30 meters

- ❖ Serial communication interface:

Transmission communication interface RS232 Transmission distance ≤ 30 meters

Baud rate: 1200/2400/4800/9600/19200 is optional

Printer interface : standard parallel output port, can connect with KX-P1121、KX-P1131、LQ300K+ II、LQ1600K、LQ-680K、DS-300 and LQ-730K/630K/635K...

- ❖ Data storage:

Vehicle number and tare weight : ≤ 1000 pcs

weighing record ≤ 1500 groups

- ❖ Power supply

AC187~242V, 50 Hz

- ❖ Work environment

Work temperature: $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$

Work humidity: $\leq 85\%$ (RH) no condensation

- ❖ Storage environment

Storage temperature : $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$

Storage humidity : $\leq 95\%$ (RH) no condensation

Dimension (mm): 346 × 84 × 233

The weight of indicator itself (Kg): about 3.5

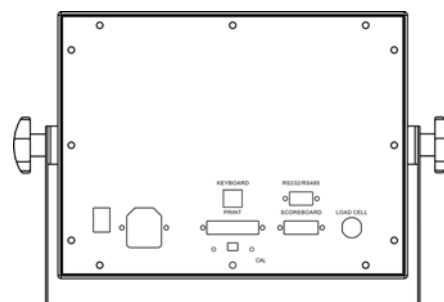
2) Installation

2.1 Indicator Layout

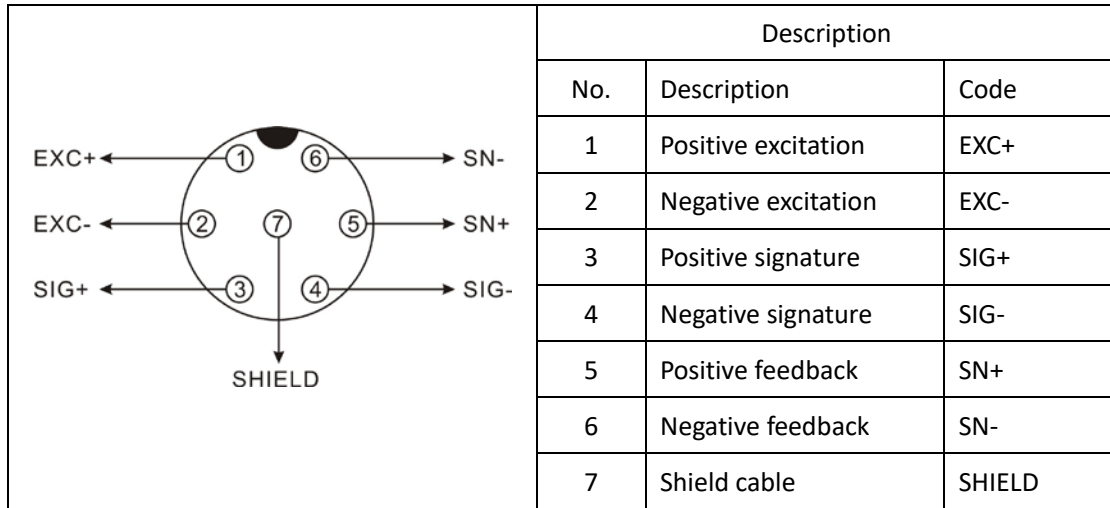
XK3118K5+ front panel



XK3118K5+ back panel



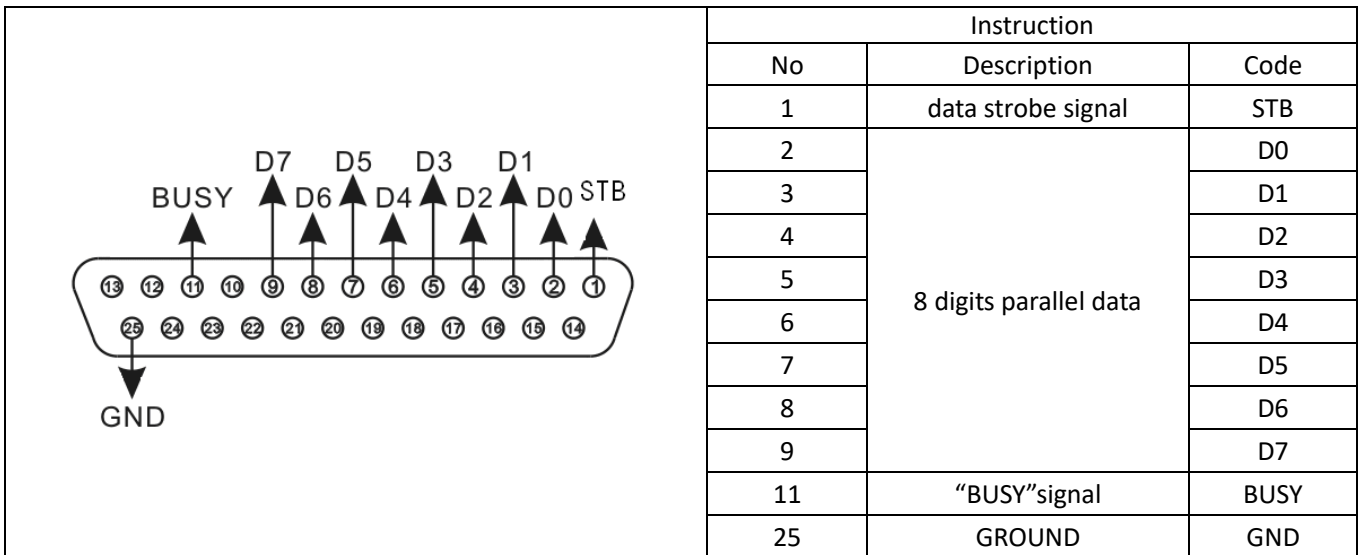
2.2 Connection to Load Cell



If use four wire shielded cable, please make short circuit of plus excitation and plus feedback, make short circuit of minus excitation and minus feedback!!!

- ▲ Load cell connect with indicator must be reliable; shield wire must be connected to ground reliably.
- ▲ Load cell and indicator are static sensitive devices, taking measures to prevent from static power when using.
- ▲ During the thunder storm season, proper lightning protection should be taken to protect the load cell and indicator from damaging by lighting and to ensure the personal safety to run of the weighing and related equipment.

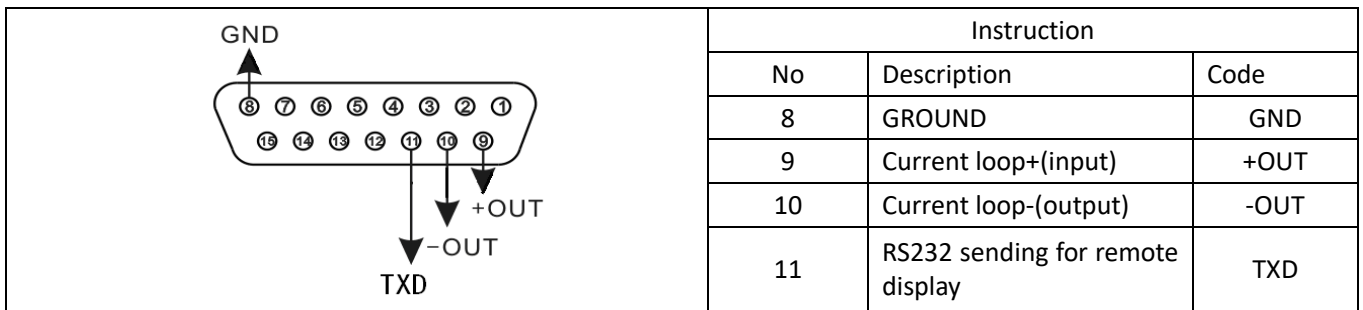
2.3 Connection to printer



Print note:

- ▲ Print function can be used after set-up.
- ▲ Indicator print port output cable must be connected to printer correctly, special printer cable is necessary.
- ▲ Due to various printer, and different characteristics, please select recommended printer.
- ▲ Printer must connect to ground reliably, otherwise it may influence the indicator normal use, or broke the load cell, indicator, scoreboard and printer.

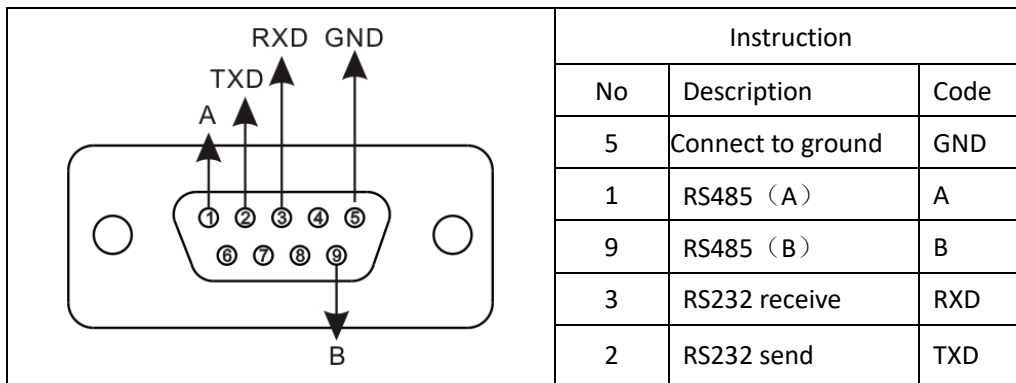
2.4 Connection to scoreboard



▲Scoreboard output port cable of the indicator must connect with scoreboard correctly. Otherwise, it would broke the output port of the indicator, or broke the scoreboard input port. Also it may break the indicator and scoreboard too .It shall use the dedicated connection cable.

▲Scoreboard must connect to ground reliably, otherwise it may influence the indicator normal use, or may broke the load cell , indicator, scoreboard and printer.

2.5 Connection to serial communication interface

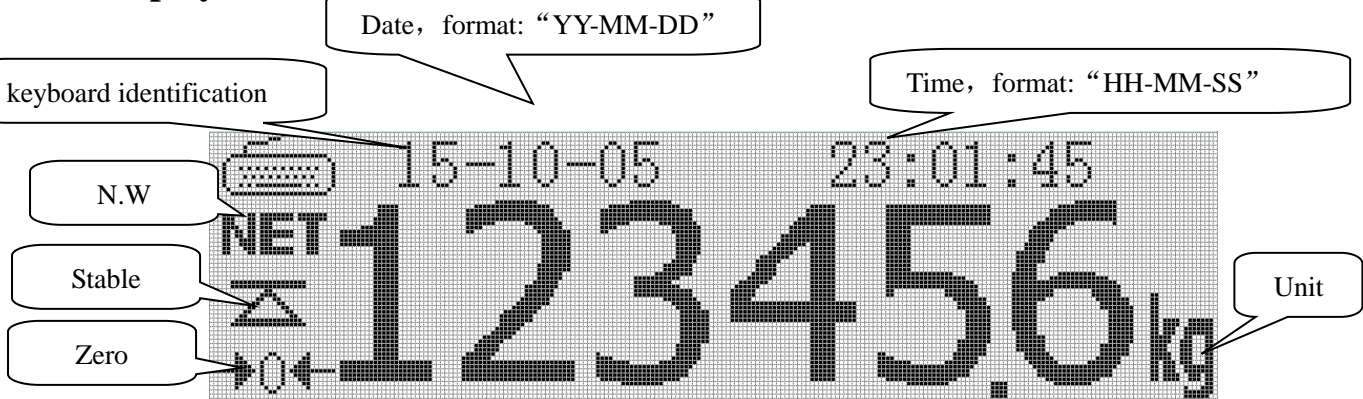


▲Connect communication interface and PC side correctly, or will break the indicator interface and PC side interface.

▲If you want to connect with PC, it shall be done by professional person .If you have the computer technology and process edit performance, it would be better. Non-professional person can not do this.

▲The indicator has RS232 serial communication interface, it could connect with computer.

3) Display instruction



4) Operation instruction

Operation :use key "←" "→" to choose the menu or press number key to choose menu,press key 'ENTER' to go into it.All is English menu and English notice,if you have basic scale knowledge ,you could operate it easily.

4.1 Normal operate instruction

4.1.1 Open and Auto Set Zero

1 After connect to AC power and turn on indicator, the indicator will perform self-check then go into weighing state.

2 If the system weight drift from zero but it is still in the range, then it would go to be zero itself.

4.1.2 Manual Zero Set (Semi-automatic Zero)

1 Press [ZERO] button, can set indicator to zero, the zero symbol will bright on.

2 If the system weight drift from zero but it is still in the range, then [ZERO] is effective, or it would be ineffective.

3 Only stable symbol bright on, then can do set zero operation .

4.1.3 TARE operation.

Under weighing state, weighing value display is positive and weighing is stable. Press TARE key, The tare weight is current gross weight. And the indicator “NET” displaying is “0”, and the “NET” symbol lights will be on; Only stable symbol bright on, then can do tare operation.

1 Under weighing statue , it could continue to do tare operation.

2 After set zero, zero symbol bright on, press [TARE] ,could equit from net weight state, net weight symbol extinguish.

3. When the indicator could be set zero, press [ZERO], could make the tare weight as zero, net weight symbol extinguish.

4.2 Parameter setting instruction

Press [MENU] to go into function menu, there are six choices,

“Communication Settings”、 “Print Settings”、 “Time Settings”、 “Charge of the License Number”、 “Print the Report”“Clear the Record”。

4.2.1 Communication Settings

Go into this menu , it could set parameters of communication address,baud rate,communication mode .

4.2.2 Print Settings

Go into this menu ,it could set print type, print format, vehicle number and cargo number .

4.2.3 Time Settings

If the date and time is not correct, then go into this menu for setting.

4.2.4 Charge of the vehicle Number

It could manage the vehicle number and relative tare weight. Press [123/ABC],it could change from the digital number to letter input mode .It could input 5 bits vehicle number, and could manage of 500pcs of vehicle number and its relative tare weight .


4.2.5 Print the Report

Go into this menu, and input the date of the report, then could print out all the weighing records that day .

4.2.6 Clear the Record

If want to clear the vehicle number, tare weight ,and weighing records, could go into this menu and do the operation .

4.3 External keyboard operation

If need an external keyboard operation, the indicator should be powered off, then plug the keyboard and boot, the top left of the indicator will show , which means keyboard identification is success.

Corresponding table for indicator keyboard and external keyboard	
Indicator keypads	External keyboard
ZERO	F1
TARE	F2
PRINT	F5
REPRINT	F6
ACC.PRINT	F7
MENU	F9 or Tab

External keyboard corresponding to the functional diagram, please refer to the last appendix of the user manual.

Note: External keyboard can't operate the following keypads: Caps Lock、 Num Lock、 Shift、 Ctrl、 Alt

4.4 Data saving and print

1、 Vehicle number and cargo number could choose 10 bits of digital number or letter to mix together.

2、 The record will be printed at the same time when record is saved. (When the print setting is valid)

- 3、 There are three modes of saving :
- When the vehicle is empty, save data, and then the vehicle is full, save data.
 - When the vehicle is full, save data ,and then the vehicle is empty, save data.
 - Only after two times saving, the data is a complete group data.
 - And when the vehicle is full and net weight identifier light on ,one time saving could be a complete group data.
5. Saving operation
- Press key [PRINT],the indicator would display date ,time and the weight data, user could input vehicle number and cargo information after confirmation, if there is no this vehicle number and cargo info ,it would make a record here. if there has this vehicle number ,then it would make record more detailed and print.
6. During print period, if there is error, or no paper, it could not print normally, after eliminate the error, and press key [REPRINT] to print.
7. Each time after weighing, it would add up, press key [A.P] which could print the total weight,after operation ,it would add up again from beginning.
- When data is not stable or net weight is ≤ 0 ,it could not do saving operation.**
- Notice:If use “REPRINT” or “Print the Report”function ,if find there is a symbol like “*”,it means the printing data is not complete.**

Appendix 1: serial communication data format

All data is ASCII code, and each byte could be 8bits data , no odd or even number. Bit 1 is stopping bit,(8,N,1) to communicate. Communication mode is like below :

1 Continue mode

The data sent is the weight value the indicator display(net weight or gross weight).Each frame data is made up of 12 groups data.

Byte number	NOTICE		
1	02(XON)	START	
2	+ OR -	Symbol bit	
3	Weighing data	High bit	
:	Weighing data	:	
:	Weighing data	:	
8	Weighing data	Low bit	
9	Decimal bit number	from right to left (0~4)	
10	XOR verify	High four bits	XOR = 2 ⊕ 3 ⊕ …… ⊕ 8 ⊕ 9
11	XOR verify	Low four bits	
12	03(XOFF)	END	

2 ORDER mode

Indicator would show one data according the order from the PC. Each time PC send an order, the indicator would show one frame data.

PC sending order

Byte number	NOTICE		
1	02(XON)	START	
2	A~Z	Address number	
3	A~I	Order A: Shake hand	ORDER B: read gross weight
	C:	read tare weight	ORDER E : read vehicale number
		Order D: read net weight	ORDER F: read cargo number
		Order G: clear all data	ORDER H: SET ZERO ORDER I:TARE
4	XOR verify	High four bits	XOR = 2 ⊕ 3 ⊕ …… ⊕ (n-1) ⊕ n
5	XOR verify	Low four bits	
6	03(XOFF)	END	

INDICATOR OUTPUT CONTENTS

Byte number	NOTICE	
1	02(XON)	START

2	A~Z Address number		
3	A~I ORDER A:shake hand		ORDER B : sending gross weight
	ORDER C: Sending tare weight		
	ORDER D: sending net weight		ORDER E : sending vehicle number
4	number ORDER F: sending cargo number		
	ORDER G: no data		ORDER H: no data
	ORDER I: no data		
:	According the order content ,to output relative data		
n	According the order content ,to output relative data		
n+1	XOR verify	High four bits	XOR =2⊕3⊕……⊕(n-1)⊕n
n+2	XOR verify	Low four bits	
n+3	03(X0FF) END		

INDICATOR OUTPUT 4~n :

ORDER A	No data	Each frame is made up of 6
ORDER B	it is gross weight,the format is below	Each frame is made up of 14 groups data
	a: symbol(+ or -)	
	b~h: gross weight value (6ofnumber and 1 decimal)	
ORDER C	it is tare weight,the format is below	Each frame is made up of 14 groups data
	a: symbol(+ or -)	
	b~h: tare weight value (6ofnumber and 1 decimal)	
ORDER D	it is net weight,the format is below	Each frame is made up of 14 groups data
	a: symbol(+ or -)	
	b~h: net weight value (6ofnumber and 1 decimal)	

NOTICE :

XOR verify ,high four bits and low four bits confirme like below

XOR high four bits and low four bits is less than or just 9 ,it shall plus 30h,make it as ASCII code digital number to be sent out.Such as :XOR high four bits as 6 ,plus 30h ,it is 36h ,it is just 6of ASCII code to be sent

XOR high four bits and low four bits is more than 9 ,please plus 37h,to make it as ASCII code letter to be sent.Such as :XOR verify high four bits is B and plus 37h ,it is 42h ,it is just B of ASCII code to be sent.

Appendix 2: Storage print format

3 Tables format:

WEIGHT BILL

S.N.	0001
DATE	12-01-08
TIME	20:08:00
L.N.	ZJ888FUK
C.N.	APPLE PIE
GRO	8000(kg)
TARE	1300(kg)
NET	6700(kg)

WEIGHT BILL

S.N.	0001
DATE	12-01-08
TIME	20:08:00
L.N.	ZJ888FUK
C.N.	APPLE PIE
GROS	8000(kg)
TARE	1300(kg)
NET	6700(kg)

WEIGHT BILL

S.N.	0001
DATE	12-01-08
TIME	20:08:00
L.N.	ZJ888FUK
C.N.	APPLE PIE
GROS	8000(kg)
TARE	1300(kg)
NET	6700(kg)

Note : L.N.=License Number

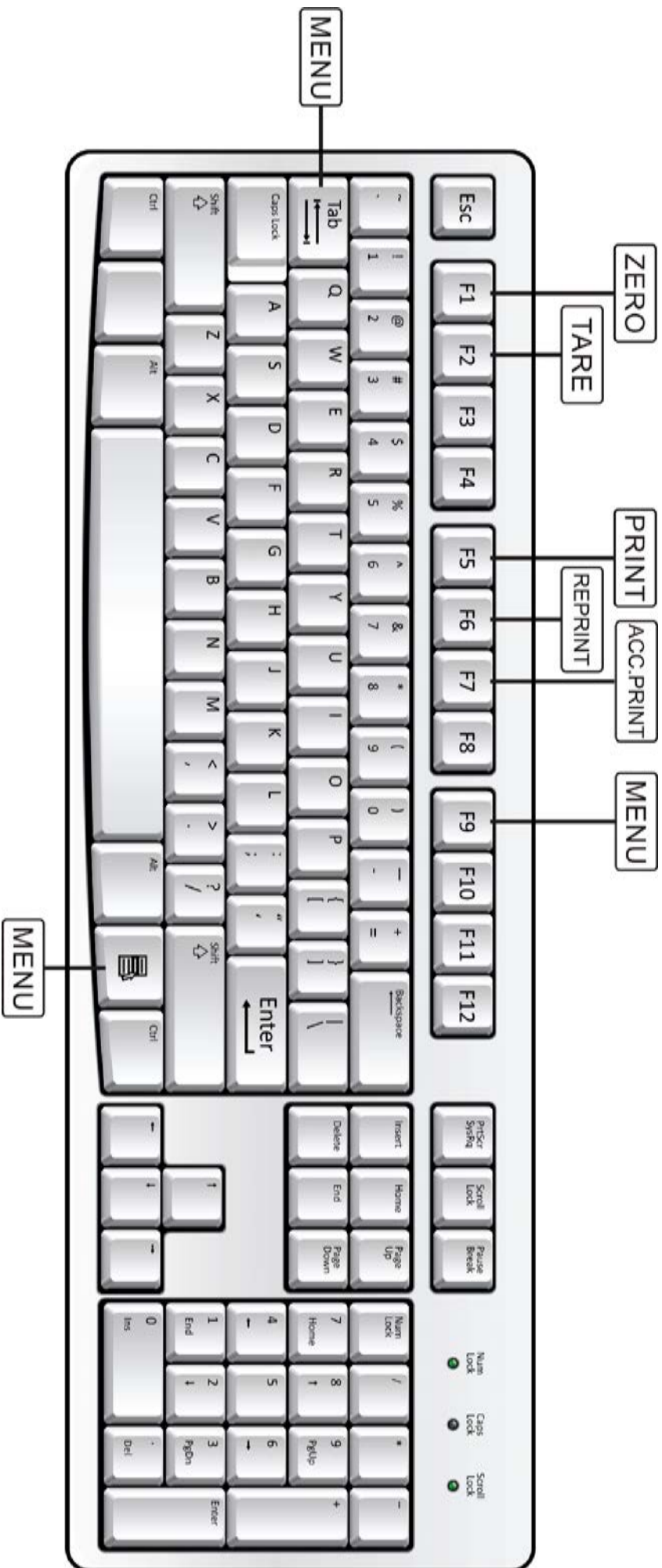
C.N.=Cargo Name

Record format :

WEIGHT BILL (unit:kg)

S.N.	DATE	TIME	L.N.	C.N.	GROSS	TARE	NET
0001	12-01-08	20:08:00	ZJ888FUK	APPLE PIE	8000	1300	6700
0002	12-01-08	20:19:21	32D-AK047	ORANGE	9000	1300	7700
0003	12-01-08	20:24:33	BMW86-SB	BANANA	8600	1500	7100

Appendix 3: Functional Diagram of external keyboard



Appendix 4: Packing list

Serial no.	Name and specifications	Quantity	Remark
1	indicator	1pc	
2	User manual	1pc	
3	Technical manual	1pc	
4	Certificate	1pc	
5	7 core aviation plug	1pc	
6	insurance tube 0.5A	1pc	
7	Double AC power cord	1pc	