Weighing Indicator

User manual



Safety instruction

For safety operation pls. follow the safety instruction.

WARNING
Set, calibrate, inspect and fix the weighing indicator is prohibited by Non professional staff.

WARNING
Pls. make sure the weighing display well earthing.

	WARNING
	The indicator is electrostatic sensitive device, pls. power off during electrical connections, internal components touched by hand is prohibited, and please take the anti-static measure.

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1. Summary

LP7517 is a thin plastic indicator specially developed by our company for floor scale applications. The indicator can be placed inside the floor scale body for convenient transportation and packaging. The indicator display interface friendly, simple operation, stable performance, power-saving and affordable.

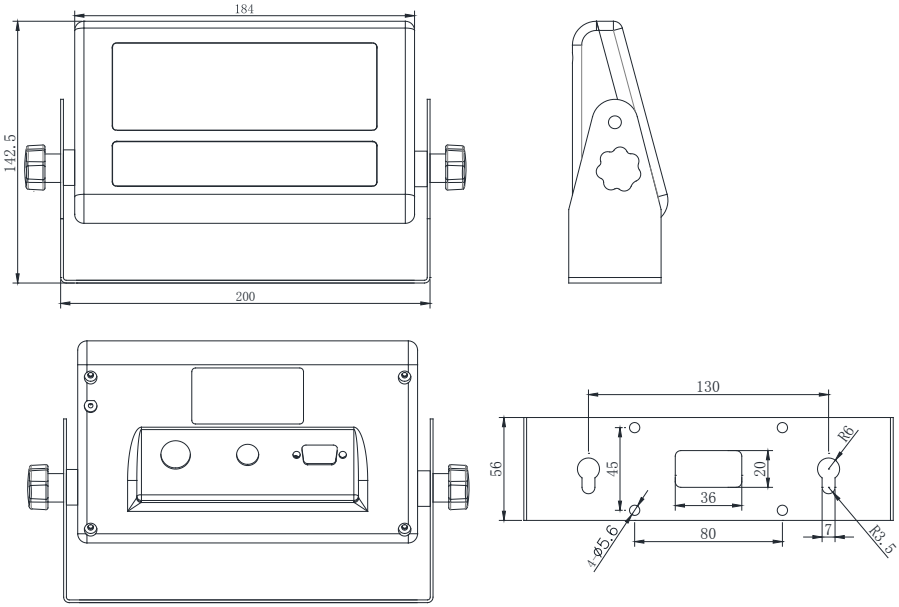
1.1 Main function

》General weighing: Zero / Tare
》Peak hold / hold function / Auto-hold / animal function
》Power off automatically and power saving function
》Battery capacity indication
》RS232 function can optional by real-time clock

1.2 Technical parameter

》Stimulating voltage: +3.3 VDC
》A/D converting speed: 10 SPS
》Load signal range: -7~12.8mV
》Load capacity: it can connect 4 pcs 350Ω Load cells at most
》Weight unit: kg, lb
》Resolution: 5000e
》Interval: 1/2/5/10/20/50
》Display: LED
》Key: On/Off Hold Unit Tare/Zero Set/Print
》Operation temperature and humidity: -10℃～+40℃; ≤85%RH
》Built-in power supply 3.7V/2Ah Lithium battery life of 25 hours

1.3 Outline and installation picture



2. Installation

2.1 Installation

Open and check the accessories to the packing list included in the instructions. If there are missing parts or parts damaged, please contact the after-sales service department of the company for timely. Ensure the proper use of the indicator.

The indicator can be placed directly on the desktop. Electrical connection

2.1.1 Connection indicator with load cells

It can connect 4 pcs 350Ω load cells at most with M16-5 connector. As below:



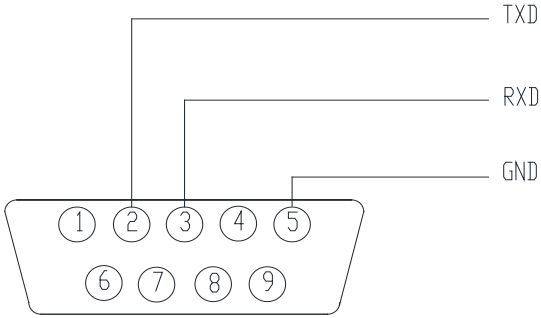
Load cell interface definition

2.1.2 Power connection

The indicator is powered by 5V/1A adaptor, you plug the adapter directly into the “DC” pin at the back cover the indicator is ok.

2.1.3 Communication interface

Optional serial port RS232 uses the DB9 to connect to a big display, printer or computer. As below:



Port wiring definition

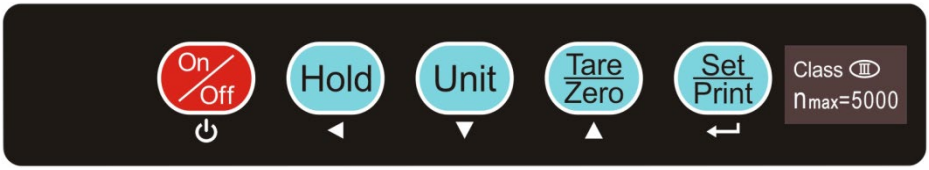
Pin	Definition	Function instruction
2	TXD	Transmit data
3	RXD	Received data
5	GND	Ground

3. Operation

3.1 Key and display



Display



Key

Weighing indicator display instruction:

LED display	Instruction
	Weighing data display
kg	Weight unit kg
lb	Weight unit lb
oz	Weight unit oz
g	Weight unit g
Hold	Hold the data

Peak	Hold the peak
Tare	Display tare status
Gross	Display gross weight
Net	Display net weight
	The weighing data is stable
	Zero, indicating zero weight
Hi	Over limit
OK	Within limit
Lo	Under limit

Key's function:

Symbol	Name	Function
	On/Off	Press 3 seconds to power on or power off
	Hold	Enter and exit "Hold" mold
	Unit	Switches the weight display to an alternate unit; The alternate unit is defined in the C31, and could be kg, lb, g or oz
	Tare/Zero	1. Clear weight within zero range, zero function 2. Exceed zero range, tare function
	Set/Print	1. Press with ON/OFF Enter the calibration 2. Press 1 second to print

3.2 Operation

3.2.1 ON/OFF

Press it for 3 seconds to power on or power off.

3.2.2 TARE/ZERO

When weighing exceed the zero range（±2%）and stable, press “Tare/Zero” to enter into net weighing mode, display net weight zero, Tare and Net light on, Gross light off.

When weighing in the zero range（±2%）and stable, press “Tare/Zero” to back to gross weighing mode, display gross weight zero, Gross light on, Tare and Net light off.

Preset tare

Press “Tare” for 2 seconds and enter the Tare weight to tare function.

3.3 HOLD

This indicator include about peak hold, hold, auto-hold, animal function and trails of animal function.

C11=0 “Hold” function unworkable

C11=1 Peak hold

C11=2 Hold

C11=3 Auto-hold

C11=4 Animal function

C11=5 Trails of animal function

3.3.1 Peak hold

Press “Hold” key, then the Hold light is on, and show the maximum data on the weighing indicator. Press “Hold” key again to exit the hold function.

3.3.2 Hold

Press “Hold” key, then the Hold light is on, and show the data on the weighing indicator. Press “Hold” key again to exit the hold function.

3.3.3 Auto-hold

If the weight on the scales above 20d and keep stable, the indicator will show the data for 6 seconds and the “Hold” light is on, after 6 seconds the indicator back to general weighing, and the “Hold” light is off.

3.3.4 Animal function

Press “Hold” key, the indicator will show “LOC” for 5 seconds, average the collected weight and show the calculated animal weight the “Hold” light is on. Press “Hold” key again to exit it. The “Hold” light is off.

3.3.5 Trails of animal function

An animal is auto weighed in the trails, animal front legs on the scale begin to weighing, the animal weighing time can be set by C40.

The average weight is calculating after the animal is weighed, the indicator will show “LOC” for 5 seconds, the collected weights will be averaged to show the calculated animal weight. The animal gets off the scale, indicator returns to the normal weighing state. The “Hold” light is off.

3.4 Up and Under limit alarm

Pls. set C13= Up limit, C14=Under limit, when the weight is over up limit, the “Hi” light will on, and indicator will make a sound to alarm; when the weight is below than the under limit, the “Lo” light will on. When the weight is within the limit, the “OK” light is ok.

3.5 Print

When the data is stable, connection with printer, it will be printed after press “Set” 1 second.

3.6 Toggle unit

Press “Unit” key, toggle between primary and secondary units.

Primary unit C01	Secondary unit C31	* Multiplier	available decimal place C02
kg	lb	2.204623	0,1,2,3,4
kg	g	1000.000	2,3,4
kg	oz	35.273968	1,2,3,4
lb	kg	0.453593	0,1,2,3
lb	g	453.593	2,3,4
lb	oz	16	1,2,3,4
g	kg	0.001	0,1
g	lb	0.0022046	0,1
g	oz	0.035274	0,1,2
oz	kg	0.028349	0,1,2
oz	lb	0.028349	0,1,2,3
oz	g	0.028349	1,2,3,4

if decimal place C02 is out of preset decimal place in the table, it can't toggle unit.

4. Calibration & parameter setting

4.1 Enter calibration

There have two methods to enter the setting menu:

1. When the switch “CAL” is off, press “Set” then press “ON/OFF” at the same time, hold it, you will enter C08-C39 setting.
2. Take out the sealing screw on the back of indicator, then put the switch “MARK” to “On” position, press “Set” still and then press “ON/OFF” at the same time, you will enter C01-C39 setting.

4.2 Key’s function


On/Off, Exit and save setting


Hold, Left


Unit, Down


Tare/Zero, Up


Set/Print, Confirm, go to next step

4.3 Parameter declaration

4.3.1 Calibration

C01 Primary unit

[C01] Press 

[C1 1] unit is kg
[C1 2] unit is lb
[C1 3] unit is g
[C1 4] unit is oz

Press , go to next step

C02 Set decimal place

[C02] Press 

option:0/1/2/3/4

[C2 0] no decimal point
[C2 1] one decimal point
[C2 2] two decimal points
[C2 3] three decimal points
[C2 4] four decimal points

Press , go to next step

C03 Division setting

[C03] Press 

[C3 1] d=1
[C3 2] d=2
[C3 5] d=5
[C3 10] d=10

[C3 20] d=20
[C3 50] d=50

Press ↵, go to next step

C04 Maximum capacity
For example: max weighing 100kg:
Set [0100.00]

Press ↵, go to next step

C05 Zero calibration
Option: 0=non-calibration zero 1=need calibration zero
Calibrate zero please choose 1 and ensure scale is empty and "stable" light is on. Count down [CAL 10] ~ [CAL 0], then the indicator will show [0.00] (example for two decimal point).
C06 Loading calibration

[C06], press ↵, show [C6 0], press ▲, change to [C6 1], press ↵, show [SPAn], basic on max capacity setting, add suitable weight on scale. Close to the max capacity, heavier than 10% max at least.
For example: the weight is 80kg, as bellows:
[0080.00]
[CAL 9]
……
[0080.00]
[CAL End]
Count down over, indicator shows loaded weight, loading calibration finish.

Press ⏻ to exit.
C07 Default parameters setting
[C7 0] non-restore default parameters
[C7 1] restore default parameters
Note: after the above parameters setting finish, please do not set default

parameters often, avoid the original setting parameters lost.

4.3.2 Application parameter setting

C08 Warning tone
[C8 1] Open warning tone
[C8 0] Close warning tone
C09 Power off automatically
[C9 0] Non-power off
[C9 10] Keep still within 10 min. Power off automatically
[C9 30] Keep still within 30 min. Power off automatically
[C9 60] Keep still within 60 min. Power off automatically
C10 Power saving setting
[C10 0] Turn off the power saving
[C10 1] Close backlight after 3 minute
[C10 2] Close backlight after 5 minute
C11 Hold
[C11 0] No Hold function
[C11 1] Peck hold
[C11 2] Data hold
[C11 3] Auto-hold
[C11 4] Animal weighing
[C11 5] Trails of animal function
C12 Hold time (if you choose C11=4, you can set the time)
Enter a sampling time of 0-9 seconds
C13 Upper limit alarm value
C14 Under limit alarm value
C15 Check inner code
C16 Date setting
Enter the date
C17 Time setting
Enter the time

4.3.3 Communication setting

C18 Serial interface setting

[C18 0] No sending

[C18 1] Big display

[C18 2] Print format output

[C18 3] Command mode (Z=zero T=tare R=Reply weight)

[C18 4] Continuous sending

C19 BAUD RATE

[C19 0] 1200bit/s

[C19 1] 2400bit/s

[C19 2] 4800bit/s

[C19 3] 9600bit/s

[C19 4] 600bit/s

4.3.4 Application setting

C20 Manually Zero

[C20 00] No Manually Zero

[C20 01] Manually Zero range ±1% Max. Capacity

[C20 02] Manually Zero range ±2% Max. Capacity

[C20 04] Manually Zero range ±4% Max. Capacity

[C20 10] Manually Zero range ±10% Max. Capacity

[C20 20] Manually Zero range ±20% Max. Capacity

[C20100] Manually Zero range ±100% Max. Capacity

C21 Initially zero

[C21 0] No initially zero

[C21 1] Initially zero range±1% Max. Capacity

[C21 2] Initially zero range±2% Max. Capacity

[C21 5] Initially zero range±5% Max. Capacity

[C21 10] Initially zero range±10% Max. Capacity

[C21 20] Initially zero range±20% Max. Capacity

[C21100] Initially zero range±100% Max. Capacity

C22 Zero tracking range

[C22 0.0] No zero tracking

[C22 0.5] ±0.5d

[C22 1.0] ±1.0d

[C22 2.0] ±2.0d

[C22 3.0] ±3.0d

[C22 4.0] ±4.0d

[C22 5.0] ±5.0d

C23 Zero tracking time

[C23 0] No zero tracking

[C23 1] 1 second

[C23 2] 2 seconds

[C23 3] 3 seconds

C24 Overload range

[C24 09] Over 9d than Max. Capacity

C25 Negative display

[C25 00] Less than -9d

[C25 10] Less -10% Max. Capacity

[C25 20] Less -20% Max. Capacity

[C25 50] Less -50% Max. Capacity

[C25100] Less -100% Max. Capacity

C26 Standstill time

[C26 0] Quick

[C26 1] Medium

[C26 2] Slow

C27 Standstill range

[C27 1] ±1d

[C27 2] ±2d

[C27 5] ±5d

[C27 10] ±10d

C28 Dynamic filter

[C28 0] Close dynamic filter

[C28 1] Low dynamic filter
[C28 3] Medium dynamic filter
[C28 5] High dynamic filter
C29 Noisy filter
[C29 0] Close noisy filter
[C29 1] Low noisy filter
[C29 2] Medium filter
[C29 3] High filter
C30 Date format
[C30 0] 99.09.29
[C30 1] 09/29/99
[C30 2] 29/09/99
[C30 3] 1999/09/29
C31 Secondary unit
[C31 1] unit is kg
[C31 2] unit is lb
[C31 3] unit is g
[C31 4] unit is oz
C35 Print format
Enter 0~99
C36 Local gravitational acceleration
Enter local gravitational acceleration
C37 Destination gravitational acceleration
Enter destination gravity acceleration
C38 Version number view
Displays the date, software version, and hardware version, respectively
C39 Multi-interval application
[C39 0] Normal mode
[C39 1] Multi-interval mode
C40 Animal scale delay
Enter the scale delay of 0 to 9 seconds
C41~C49 Print related configurations

4.3.5 Exit setting

For example [C10 1], press , confirm it then press  to exit and save it

5. Maintenance

5.1 Regular error and maintain method

Error	Reason instruction	Solution
Display UUUUUU	1. The loaded weight excess overload range of Max. Capacity 2. Wrong connection with load cell or no connection with it. 3. Load cell unworkable	1. Decrease loaded weight 2. Check load cell connection. 3. Checking load cell: check input and output resistance to judge it is good or not.
Display nnnnnn	1. Calibration is not good 2. Cell single line is connecting a wrong line. 3. The Load cell is bad.	1. Check scale is resisted or not, foot is kept level or not. 2. Check load cell connection. 3. Checking load cell: check input and output resistance to judge it is good or not.
ERR1	During calibration, no input added weight or input weight exceed max capacity.	Input the correct weight

ERR2	During calibration, the added weights not enough	Added weight at least 10% of Max. Capacity, Recommend the weights is 60-80% the Max. capacity
ERR3	During calibration, input single is negative.	1. Check connection is correct or not. 2. Check load cell is damaged or not. 3. Renew calibration, if still wrong. pls replace the PCB
ERR4	During calibration, single is unstable	Ensure added weight and scale is stable, start calibration
ERR5	EEPROM check error	Change PCB.
ERR6	Exceed Zero range	unload weight.

5.2 Daily maintenance

1. In order to ensure indicator display clearly and prolong use life, the indicator should not be placed directly on sunlight.
2. Load cell and indicator should be well connected, the system should have a good ground, away from strong electric field, magnetic field.
3. Do not use indicator outside in rainy, better keep it power off.
4. Power off firstly while plug and unplug.

5.3 Battery maintenance

In the lower right corner of indicator have battery voltage, can see direct.

If the battery voltage is too low, that's when the last grid blinks, please

charge.

The battery grid flickers when charging, and the charging time is generally 6-8 hours.

Full battery power grid all lights up. The indicator has a built-in intelligent charge management chip, which can continue to use power supply after being fully charged, preventing battery overcharge.

5.4 Restore default parameters

Enter setting menu, set C07=1, press  then press  exit saving setting, all parameters will be back to default setting.

Note: Pls. do not restore default parameter easily if you are not professional and have not scale calibration.

Default parameter format

Parameter	Instruction	Default value
C01	Primary unit	2
C02	Decimal place	0
C03	Division value	2
C04	Max capacity	10000
C05	Empty scales calibration	0
C06	Capacity calibration	0
C07	Restore the default parameters	0
C08	Warning tone	1
C09	Automatic power off	0
C10	Power saving mode	0
C11	Hold function	0
C12	Animal weighing mode	0
C13	Upper limit warning	000000
C14	Under limit warning	000000
C15	Inner code display	

C16	Date setting	
C17	Time setting	
C18	Serial interface data output	0
C19	Serial interface Baud rate	3=9600
C20	Manual zero setting	2
C21	Initial zero setting	10
C22	Automatic zero tracking range	0.5
C23	Automatic zero tracking time	1
C24	Overload range	9
C25	Negative range	10
C26	Standstill time	1
C27	Standstill range	2
C28	Dynamic filter	0
C29	Noisy filter	2
C30	Print date format	1
C31	Secondary unit	1
C35	Print format	
C36	Local gravitational acceleration	9.7936
C37	Destination gravitational acceleration	9.7936
C38	Version number view	
C39	Multi-interval application	0
C40	Animal scale delay	5

1. Big display continuous sending format

Output continuous format																	
STX	SWA	SWB	SWC	X	X	X	X	X	X	X	X	X	X	X	X	CR	CKS
1	2			3						4						5	6

State A			
Bits0,1,2			
0	1	2	Decimal point position
1	0	0	XXXXXX0
0	1	0	XXXXXXX
1	1	0	XXXXX. X
0	0	1	XXXX. XX
1	0	1	XXX. XXX
Bits3,4			Division
0	1		X1
1	0		X2
1	1		X5

State B	
BitsS	function
Bits0	Gross=0， Net=1
Bits1	symbol: positive =0，negative =1
Bits2	overload（or lower zero）=1
Bits3	dynamic=1
Bits4	unit: lb=0, kg=1
Bits5	Constant 1
Bits6	Constant 0

2. Print output format

Date: 22.08.12

Time: 10:20:30

Net 10.00kg

Tare 18.88kg

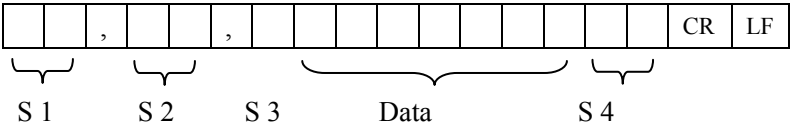
Gross 28.88kg

3. Port receives computer commands

RS232COMeceive simple ASCII commands，as below:

Display	Name	Function
T	TARE	Save the weight
Z	ZERO	zero the weight
P	PRINT	printer the weight
R	READ	read the weight

Computer continuous sending format



S1: weight status, ST= standstill, US= not standstill, OL= overload

S2: weight mode, GS=gross mode, NT=net mode

S3: weight of positive and negative, “+” or “–”

S4: measurement unit, “kg” or “lb”

Data: weight value, including decimal point

CR: carriage return

LF: line feed

5 format 3 Compatible with Yaohua computer communication format

6 format 4 Compatible with Yaohua big display format