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

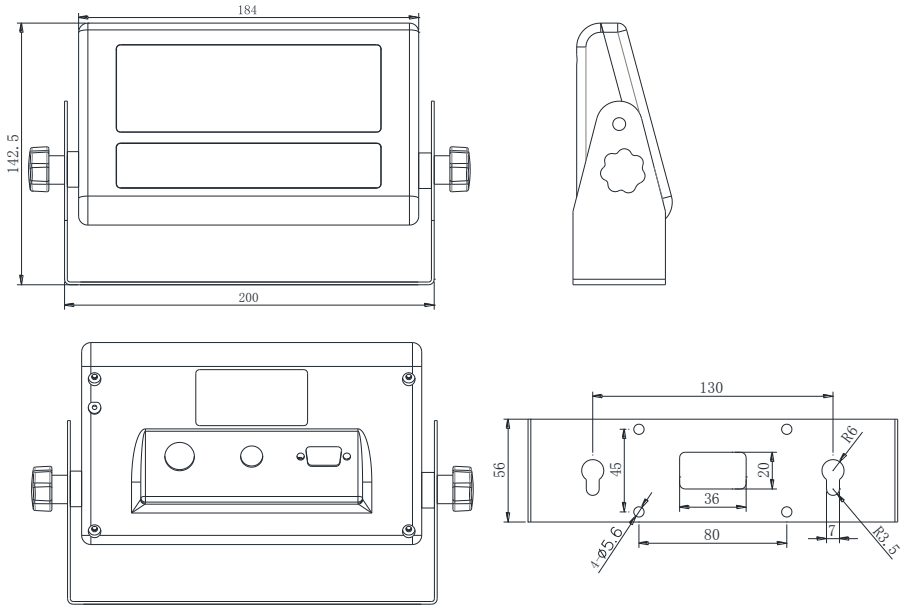
》General weighing: Zero / Tare / Total
》Peak hold / hold function / Auto-hold / animal function
》Power off automatically and power saving function
》Battery capacity indication
》RS232 function can optional by real-time clock

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: 

》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.

2.2 Electrical connection

2.2.1 Connection indicator with Load cells

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



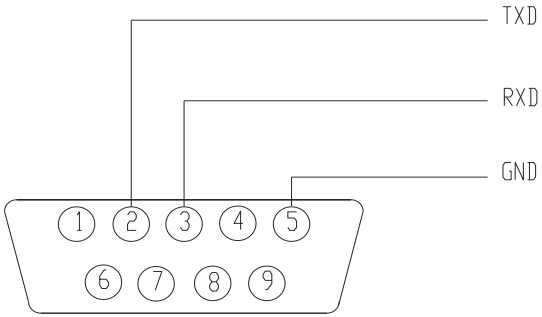
Load cell interface definition

2.2.2 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.

2.2.3 Communication interface

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



Port wiring definition

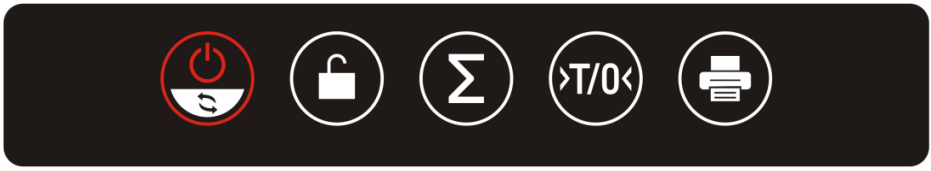
Pin	Definition	Function instruction
2	TXD	Transmit data
3	RXD	Received data
5	GND	Ground

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*
Hold	Hold the data
Peak	Hold the peak weight
Tare	Display Tare status

Gross	Display Gross weight
Net	Display Net weight
Total	Accumulation
	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 unit convert*	1. Press 3 seconds to power on or power off 2. Press key to convert units*
	Hold	Enter and exit "Hold" mode
	Total	1. Accumulating operation 2. Work with "Print" to check the total weight
	Tare/Zero	1. Clear weight within zero range 2. Exceed zero range, tare function 3. Long press to preset tare
	Print	1. Press with On/Off enter the calibration 2. Long press to print 3. Work with "Tare/Zero" weight 10 times

3.2 Operation

3.2.1 ON/OFF

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

3.2.2 kg/lb Conversion*

If you choose kg/lb conversion, in normal weighing mode, you can press “On/Off” key to achieve kg/lb conversion.

3.2.3 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

C11=6 Stable hold 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.

3.3.6 Stable hold function

After animal is on the scale, the scale automatically stabilizes and the indicator calculate the weight of the animal. Compared with the automatic animal weighing function of the trails of animal function, the automatic animal weighing function does not need to be triggered, and the response is faster; Can support more than one animals on the scale. But this function is not for very active animals. This function need work with parameters C28 and C29 Digital filtering.

3.4 Total

3.4.1 Accumulation operation

At Zero mode, load weight till stable, press “Total” key go to accumulating mode, “Total” light on, display “n001”, and then display loaded weight; unload weight, back to zero, load weight again till stable, press “Total”, display “n002”, then show the loaded weight. Repeat it maximum 999 times.

3.4.2 Check the total weight operation

Press “Print” hold it then press “Total” at the same time, display “n**”, (accumulating times) then display total weight. If the total weight does not exceed 6 digits, it is displayed as 6 data totally, otherwise the total weight 8 data totally, it shows the first 4 digits, then the last 4 digits. For example, the first 4 digits is “0012”, the last 4 digits is “34.56”, it means the actual weight is “1234.56”

3.4.3 Exit accumulate function

At TOTAL (accumulate) mode, press “Total” key the indicator show “clr n”, it means don’t clear the total weight, press key confirm it and exit; If clear total weight, when display “clr n”, press “Tare/Zero” to change to “clr y” it means clear total weight display. Press “Print” to clear the total weight and exit accumulating mode.

3.5 Ten times high resolutions

Press “Print” and “Tare/Zero” key at the same time, you will get 10 times high resolutions. And it will back to normal weighing after 3 seconds.

3.6 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 low limit, the “Lo” light will on. When the weight is within the limit, the “OK” light is on.

3.7 Print

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

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  then press  at the same time, hold it, you will enter C08-C39 setting.
2. Take out all of screws on the back of indicator, then press down the “span”, press  and then press  at the same time, you will enter C01-C39 setting.

4.2 Key’s function

 Exit and save setting

 Left

 Down

 Up

 Confirm, go to next step

4.2.1 Calibration

C01 UNIT

[C01] Press 

[C1 1] unit is kg

[C1 2] unit is lb*

Press , go to next step

C02 Set decimal digits

[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.

If you want to set application parameter, press  , if you want to exit. Press 

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.

4.2.2 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

4.2.3 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

4.2.4 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 kg/lb conversion
[C31 0] Prohibit kg/lb conversion
[C31 1] Allow kg/lb conversion
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

4.2.5 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.
ERRAD	AD chip fault	Change PCB.

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	Calibration unit	1
C02	Decimal digits	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	3
C11	Hold function	2
C12	Animal weighing mode	5
C13	Upper limit warning	000000
C14	Lower limit warning	000000
C15	Inner code display	
C16	Date	
C17	Time	
C18	Serial interface data output method	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 display range	10
C26	Standstill time	1
C27	Standstill range	2
C28	Dynamic filter	1
C29	Noisy filter	2
C30	Date format	0 (1*)
C31	kg/lb conversion	0 (1*)
C35	Print format	1
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	

NOTE: “*” means this option only for NTEP version.

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

Net 10.00kg

Tare 18.88kg

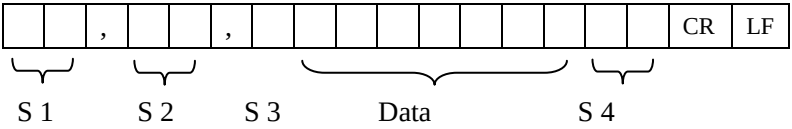
Gross 28.88kg

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