



**TD-WS**

**WEIGHING INDICATOR**

**Operation Manual**

## 1 Introduction

- Simple operation
- Keyboard calibration and configuration
- Weighing up to 1:15,000 divisions
- Excitation voltage: DC 5V; Up to 4, 350  $\Omega$  load cells can be used
- Manual or automatic memory accumulation facility
- High Resolution ( $\times 10$ ) Display
- Selectable digital filtering
- Selectable automatic power off
- 6-bit Display: 0.8 inches LED
- Selectable display resolution:  
1/2/5/0.1/0.2/0.5/0.01/0.02/0.05/0.001/0.002/0.005/10/20/50/100/200/500/0.10/  
0.20/0.50/0.010/0.020/0.050
- RS-232C The interface , optional RS-485 interface 1200 2400 4800 9600  
Baud rate continuous ASCII data output
- External Power supply: 230V(115V) AC. Internal rechargeable 6V DC Battery
- Operating temperature: 0°C to 40°C. Storage temperature: -25°C to 55°C
- Relative humidity:  $\leq$  85% non-condensing
- Dimensions: 256mm wide  $\times$  165mm high  $\times$  130mm deep

## 2 keypad functions

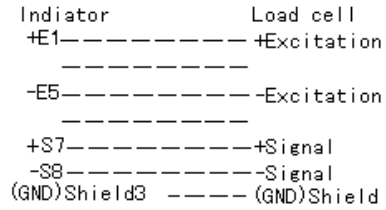
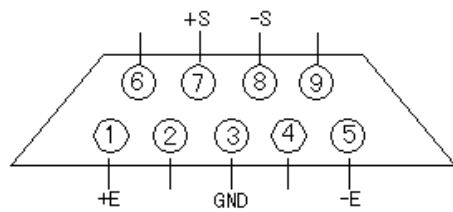
- 【OFF】** Off function
- 【ON】** On function
- 【∴】** Manual accumulation function
- 【\*】** Function selection during normal operation and configuration
- 【→】** Move the flashing digit to the right during configuration or setting  
Preset tare
- 【↑】** The display is temporarily set to high resolution increment the flashing  
digit during configuration or setting preset tare;
- 【→0←】** Zero the display, set the zero point or enter a tare value

## 3 Display status

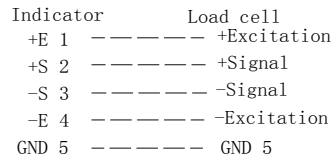
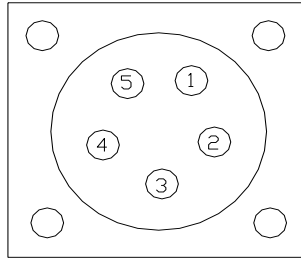
- 【AC】** Mains power is applied to the indicator
- 【→T←】** A weight has been tare display is showing the net weight
- 【□】** Battery capacity less than 30%
- 【→0←】** The scale is Zero
- 【-AUTO-】** The automatic accumulation function is active
- 【▲】** The Weight is stable
- lb** **【lb 0】** The unit of weighing is lb
- 【 0.】  $\times 10$**  The display is temporarily set to high resolution

## 4 Technical Description

### 4.1 Load cells to indicator D-B 9 Pin plug



## 4.2 Load cells to indicator 5 Pin plug



## 4.3 RS-232C D-B 9

Pin 3 Output (TXD)      Pin 5 Signal Ground(GND)

## 4.4 Continuous ASCII RS-232 data output format

### 4.4.1 Automatic Output

#### 4.4.1.1 Address: Adr = 00

The ASCII data format is “=,X1,X2, X3,X4,X5,X6”

<stx> =, X1 , X2, X3 , X4, X5, X6 <cr>

X1, X2, X3, X4, X5, X6 is weight data.

If the weight is [ 100.00 ] kg, the continuous output is = 00.001 = 00.001=

#### 4.4.1.2 Address: Adr = 99

The ASCII data format is “=,X6,X5,X4,X3,X2,X1”

<stx> =, X6 , X5, X4 , X3, X2, X1 <cr>

X6, X5, X4, X3, X2, X1 is weight data..

If the weight is [ 100.00 ] kg, the continuous output is = 100.00 = 100.00=

#### 4.4.1.3 Manual and Automatic Printing Output

Address: Adr = 01—98

## 5 Power

In power off states, press 【ON】 key turn on the indicator . The indicator will check the LED and display battery capacity [bPt 82] for 1.5 second.

## 6 Configuration

Connect load cells to the indicator and set following configuration parameters

Step	Operation	Displaying	Contents
1	Press 【→0←】 【ON】	Self test from [UEr 7.9] [0] to [9] [ 0]	In power off states, press 【→0←】 key and 【ON】 turn on power, segment check, and display [UE—7.9] edition No 1.5 second.
	Press 【*】 Press 【*】	[CAL SP] [-SEt-]	Enter of the scale Enter the configuration setting modal

	Press 【→】	〔d 1〕	The number of scale divisions selected
3	Press 【↑】 Press 【↑】	〔d 2〕 〔d 0.1〕	0.001-0.002-0.005-10-20-50-100-200-500-0.10-0.20-0.50-0.010-0.020-0.050-1-2-5-0.1-0.2-0.5-0.01-0.02-0.05 For example: d = 0.1
4	Press 【*】 Press 【→】 Press 【→】 Press 【→】 Press 【↑】 Press 【↑】 Press 【↑】	〔 6000〕 〔000000〕   〔001000〕 〔002000〕 〔003000〕	Sets scale F·S    For example: F·S=3000
5	Press 【*】 Press 【→】	〔FLt 10〕 〔FLt 00〕	Sets digit Filter parameters :00-99 The display will update faster and filter faster as The filter parameter is changed from 99-00 For example: FLt = 00
6	Press 【*】 Press 【→】 Press 【→】      Press 【↑】	〔AUtP00〕 〔AUtP00〕 〔AUtP00〕      〔AUtP10〕	Sets Automatic Power Off function AUtP=00 Not automatic power off AUtP=01 Automatic power off digit express the choice of zero trace range (1--9): 1:0.4 d 2:0.8 d 3:1.2 d 4:1.6 d 5:2d 6:2.4 d 7:2.8 d 8:3.2 d 9:3.6 d decimal digit express the choice of zero set decimal digit =0 no zero set at start operation decimal digit ≥1 zero set at start operation 20%FS For example: AUtP=10 (AUtP=10 when leaving the factory)
7	Press 【*】	〔Adr 00〕	continuous output :Adr=00
8	Press 【*】 Press 【↑】	〔b 2400〕 〔b 4800〕	Baud rate range: 1200→2400→4800→9600 For example: b=4800
9	Press 【*】	〔 1000〕	No :1 setpoint output Weight<1000 display LO☆
10	Press 【*】	〔 2000〕	No :2 setpoint output 1000< Weight<2000 display OK Weight>2000 display HI ☆
11	Press 【*】	〔 0〕	Press to confirm configurations and go to calibration menu

Note:one time accumulation is allowed for weighing once. Following accumulation is allowed for weighing only when displayed value is below 20 d.

☆ Optional LO—OK—HI and two setpoint output PCB

☆ Press 【→】 key for two seconds, LCD display for LED are turned on(A1GB-L)

## 7 Calibration

Calibration should be done after setting the parameters

Step	Operation	Displaying	Comments
1	Press 【*】 Press 【→】	〔CAL SP〕 〔CAL 00〕	Enters calibration Zero the scale
2	Press 【*】	〔-----〕 〔 3000〕	Starts zero calibration and wait for calibration to complete

3	Load the standard weight for F·S on the platform press 【*】	【-----】 【 3000】	Starts calibration and wait for calibration to complete
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Pressed 【\*】 key three times during calibration or configuration, The indicator will display. To view the A/D counts, press the 【→】 key when 【-A-d-】 is displayed press the 【\*】 key to return to weighing mode.

## 8 Zero

When the weight is stable, Press 【→0←】 key for two seconds to set the zero point and zero the display. the 【→0←】 status LED is turned on.

## 9 Tare

### 9.1 Digital tare

press 【→】 key , set tare with 【→】 and 【↑】 key , then press 【→0←】 key , the input data is tare , Tare status LED is turned on.

### 9.2 Acquire tare

When Tare status LED is off and the weight is stable, press the 【→0←】 key to acquire tare and switch to net mode. The Tare status LED is turned on.

### 9.3 Remove tare

When Tare status LED is on, press 【→0←】 key will switch to gross mode and removed tare. The Tare status LED is off.

## 10 Manual weight accumulation

When weight is stable, press 【.:】 key to accumulation the current weight to the total weight, The total number of accumulation will be displayed for 【n 12】 1.5 seconds.

## 11 High resolution display mode

In this display mode , press 【↑】 , switch to high resolution display mode. (10 times normal display) The last decimal point is light on. Press 【↑】 key return to normal weight display mode.

## 12 Automatic Memory Accumulation

Selection of manual/automatic accumulation function (Selection of manual /automatic print function). Selection of animal scale, peak value retain and counting function.

Step	Operation	Displaying	Contents
1	Press <b>【*】</b>	[[ n 12]]	to display times of accumulation
	Press <b>【*】</b>	[[ AUt 0]]	<p>the selection of manual/automatic accumulation</p> <p>AUt = 0, manual accumulation</p> <p>AUt = 1, automatic accumulation and print when weight is added, [[ AUTO]] indicator is lit.</p> <p>AUt=2, automatic memorize displayed value when weight is added. Accumulate and print final stable values after load down to below 20d. [[ AUTO]] indicator is lit.</p> <p>AUt=3,dynamic weighing method. At weighing &gt;20d: the buzzer sounds “du”and lock is displayed for 6 seconds. When a new data is fixed, lock is displayed again for 6 seconds. Then lock is released for weighing &lt;20d; automatic accumulation and print. Suggest FLt&gt;30, [[ AUTO]] indicator is lit.</p> <p>AUt=4, peak value fixed weighing method. At weighing&gt;20d, the buzzer sounds“du”and lock is displayed. When weighing &lt;20d, fixed data displays with flash, automatic accumulation and print. Lock can be released by pressing any key. [[ AUTO]] indicator is lit.</p> <p>AUt=5, dynamic weighing method. Manual accumulation and print.</p> <p>AUt=6, peak value fixed weighing method. Manual accumulation and print.</p> <p>AUt=7, counting function. ★note</p>
3	Press <b>【↑】</b>	[[ AUt 0]]	digit displays with flash
4	Press <b>【↑】</b> Press <b>【↑】</b> Press <b>【↑】</b>	[[ AUt 0]] [[ AUt 1]] [[ AUt 2]] [[ AUt 3]]	<p>Sets F·S</p> <p>Move binking digit to the right bit</p> <p>e.g. AUt=3 expresses dynamic weighing method</p>
5	Press <b>【*】</b>	[[ 0]]	return to normal weighing status

note: (1) sampling: When net weight on scale is zero (tare can be removed by pressing tare key if net weight is not zero), the sample , which must be <200 pieces, i.e. between 1 to 199, is put on the scale. Press **【→】** and **【↑】** , input quantity of the sample (e.g.30), [[Cnt030]] is displayed. Press **【\*】** , confirm the completion of sampling. Weighing status is redisplayed. Sampling is memorized even with power off.

Step	operation	display	description
1	place sample		place selected sample, weight: 27, quantity:30
2	press <b>【→】</b> press <b>【→】</b>	[[Cnt000]] [[Cnt000]]	<p>ready to input sample's quantity</p> <p>decimal digit display with flash</p>
3	press <b>【↑】</b> press <b>【↑】</b> press <b>【↑】</b>	[[Cnt010]] [[Cnt020]] [[Cnt030]]	
4	press <b>【*】</b>	[[ 27]]	display sample's weight:27, <b>【*】</b> is a confirmation key, sample collection completed
5	press <b>【↑】</b>	[[C 30]]	display sample's quantity, <b>【↑】</b> is change-over key between weight and quantity display

(2) Counting operation: place the object on scale, weight is displayed, press **【↑】** ,

[[C 255]] is displayed, and the display changes over to the quantity of the object. When the display is stable, press 【.:】 , accumulate the weight and quantity. Accumulation can be done only at counting status.

Step	operation	display	description
1	place object	[[ 230]]	object weight:230
2	press 【↑】	[[C 255]]	object quantity:255
3	press 【.:】	[[n 4]] [[C 255]]	display after 1.5 seconds at counting status

(3) accumulate inquiries and delete: both at weighing stage and counting status

Step	operation	display	description
1	press 【*】	[[C 1203]]	display the total quantity of the object:1203
2	press 【↑】	[[H 0]]	display accumulated weight 4 digits higher
3	press 【↑】	[[L 1085]]	display accumulated weight 4 digits lower=1085
4	press 【↑】	[[C 1203]]	back to counting status
5	press 【→0←】	[[C 0]]	delete accumulated quantity

### 13 Clear memory

Press【→0←】key If the memory has previously been cleared the display will show [[n 0]] followed by zero weight when the 【\*】 key is pressed.

### 14 How to set datum

Press 【→】 key move and blinks the current digit to.

Press 【↑】 key increment the current digit to the next available value

### 15 Battery capacity

When the indicator is being power on/off.battery capacity will be displayed [[PBt 85]] for1.5 seconds

- When the battery is capacity less than 20%,the display will start to blink, power off the indicator to avoid over discharging battery or connect the external main. Power supply
- When the battery capacity  $\leq$  10%,the indicator automatic turn off to avoid battery over discharge
- In auto power off mode, If weight is stable and no key operation for more than >3 mints, The indicator displays [[- ]] to conserve battery
- When auto power off setting is action, If weight is stable and no key operation > 30 mints automatic turn off power
- A full charged battery life is approximately 30 hours

### 16 Unit of weighing:( kg and lb )

kg or lb is selectable. The unit of weighing is kg normally. You can change it to lb by pressing and holding 【\*】 key 2 seconds at least.

### 17 Connection to Mini-printers

Connect serial port printer Type Up-16TS as follows:

Indicator		Serial Port Printer
9 pin hole		25 pin needle
3	TXD	2
5	GND	7

Note: Before connection to printer, communication address is set as Adr=01; baud rate is set as b=2400.

Print operation with serial port printer is as follows:

17.1. Print: at weighing status, weighing data >20d and display is stable, press 【 ∙ ∙ 】, weighing sheet is printed out. The second printing can be operated only when the weighing data is back to <20d.

17.2 Accumulated print: at weighing status, press 【 \* 】, then press 【 ∙ ∙ 】, accumulated printing can be operated.

17.3 Set to be automatic accumulation status, i.e. automatic print.

At weighing status, weighing data >20d and display is stable, weighing sheet is printed out. The second printing can be operated only when the weighing data is back to <20d and more weight is loaded.

Attached with print sample

Normal print	accumulation print
NO:1 (serial No.)	NO: 9 (number of accumulation)
Gross: 3940kg (gross weight)	W: 8225kg (accumulated weight)
Tare: 2000kg (tare weight)	
Net: 1940kg (net weight)	

## 18 Precaution

- Indicator should be far away from heat resource while using.
- Do not place the indicator in the dusty surroundings or the site vibrant.
- Cannot use full capacity. Over load stops hitting platform support is not permitted.
- To ensure to keep out of chemical erosion, Operating temperature range will be -10-50°C, relative humidity is no less than 85%, without any corrupt gas in air.
- Never pour the water into the indicator.
- Housing, head pallet, wire connector should be sealed entirely. Users do not open sealed device or connect with wire without any expert advice. In case any malfunction of indicator occurs, please sent the indicator for maintenance.
- The indicator will charge the internal battery at all times when it is connected to the main power.

## 19 Services

Offer a full range of technical services such as on site and workshop repair, Preventative maintenance and calibration facilities.

**★(Battery is not in the services range )**