# X1

INDICATOR

EN

V.2.2
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VALUE EACH GRAM
HiWEIGH


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# INDEX

EN

# 1. INTRODUCTION

| | |
|---|---|
| A/D resolution | 100.000 |
| A/D sampling speed | 40 times / second |
| Excitation voltage | 5 V dc; up to 4 load cells 350 Ω , 8 load cells 700 Ω |
| 6-bit display | 20 mm 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 / ... |
| Serial RS-232 interface | Optional RS-485 interface |
| Rate continuous ASCII data output | 1200 / 2400 / 4800 / 9600 Baud |
| External power supply | 100V – 240V AC |
| Internal rechargeable battery | 6V dc |
| Operating temperature | de 0ºC up to 40ºC |
| Storage temperature | de -25ºC up to 55ºC |
| Relative humidity | ≤ 85 % non-condensing |
| Approximate weight | 2 kg |

# 2. KEYBOARD DESCRIPTION

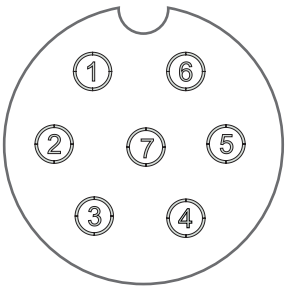

| | |
|---|---|
| OFF | OFF function. |
| ON/ESC | ON function. |
| M+ PRINT | Function selection during normal operation and configuration. |
| FN | Manual accumulation function. |
| → | Move the flashing digit to the right during configuration or setting preset tare. |
| X10 | Increase the flashing digit during configuration or setting preset tare. |
| →T← 0 | Zero the display, set the zero point or enter a tare value. |

# 3. SYMBOLS OF THE SCREEN

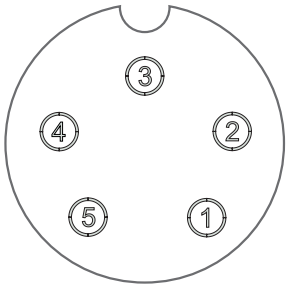
| | |
|---|---|
| AC | Main power is applied to the indicator. |
| | Battery capacity less than 30 %. |
| Auto | The automatic accumulation function is active. |
| | The weight is stable. |
| Tare | A weight has been tare, display is showing the net weight. |
| Zero | The scale is Zero. |
| kg | The unit of weighing is kg. |
| lb | The unit of weighing is lb. |

# 4. TECHNICAL DESCRIPTION

4.1 Connection of the load cells to indicator.



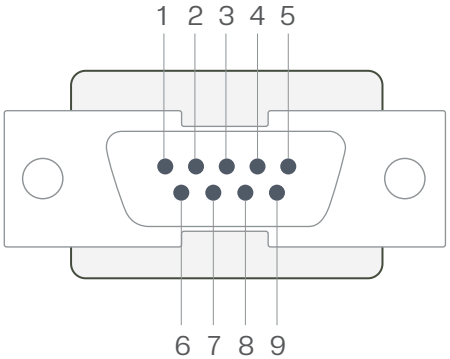

| | |
|---|---|
| PIN 1 | E+ |
| PIN 2 | E+ |
| PIN 3 | S+ |
| PIN 4 | S - |
| PIN 5 | E- |
| PIN 6 | E- |
| PIN 7 | GND shield |




| | |
|---|---|
| PIN 1 | +E |
| PIN 2 | +S |
| PIN 3 | -S |
| PIN 4 | -E |
| PIN 5 | GND shield |

4.2 RS-232 D-B 9

Pin 3: TXT Output Pin 5: GND




4.3 Continuous ASCII RS-232 data output format

4.3.1 Address: Adr=99
The ASCII data format is "=, X1, X2, X3, X4, X5, X6"
<stx> =, X1, X2, X3, X4, X5, X6
X1, X2, X3, X4, X5, X6 are weight data.
4.3.2 Address: Adr=00
The ASCII data format is "=. X6, X5, X4, X3, X2, X1"
<stx>=, X6, X5, X4, X3, X2, X1
X6, X5, X4, X3, X2, X1 are weight data.
If Address: Adr=99, If the weight is 100.00, the continuous output is "=100.00"
If Address: Adr=00, If the weight is 100.00, the continuous output is "=00.001"
4.3.3 Address: Adr=1—98 manual and automatic printing output

## 5. POWER

In power off states, press ON/ESC key turn on the indicator. The indicator will check the LED and display battery capacity bPt82 for 1.5 seconds.

## 6. CONFIGURATION

Connect load cells to the indicator and set following configuration parameters.

| Step | Operation | Displaying | Contents |
|---|---|---|---|
| 1 | Press →T← 0 and ON/ESC at same time | Self test from UEr 1.6<br>0, to 9<br>0 | In power off states, press →T← 0 and ON/ESC to turn on, selfcheck, and displaying UEr 1.6 edition No 1.5 second. |
| 2 | Press FN<br>Press FN | CAL SP<br>-SET- | Enter of the scale.<br>Enter the configuration setting modal. |
| | Press → | d 1 | The number of scale divisions selected. |
| | Press ↑ X10<br>Press ↑ X10 | d 2<br>d 0 1 | 1 / 2 / 5 / 0.1 / 0.2 / 0.5 / 0.01 / 0.02 / 0.05 / 0.001 /0.002 / 0.005 / ...<br>For example: d=0.1 |
| 4 | Press FN<br>Press →<br>Press ↑ X10<br>Press ↑ X10<br>Press ↑ X10 | <br>6000<br>000000<br>001000<br>002000<br>003000 | Sets scale F·S<br>Moves the digit at right.<br>For example: F·S=3000 |
| 5 | Press FN<br>Press →<br>Press ↑ X10<br>Press ↑ X10<br>Press ↑ X10 | FLt 10<br>FLt 00<br>FLt 10<br>FLt 20<br>FLt 30 | Sets display Filter parameters: 00<br>The display will updata faster and filter faster as the filter parameter is changed from 99-00.<br>For example: FLt=30 |
| 6 | Press FN<br>Press →<br>Press →<br>Press ↑ X10 | AUtP00<br>AUtP00<br>AUtP00<br>AUtP10 | Sets automatic power off function.<br>AUtP=00 Not automatic power off.<br>AUtP=01 Automatic power off.<br>Digit express the choice of zero trace range (0-9)<br>1:0.4d 2:0.8d 3:1.2d 4:1.6d 5:2d 6:2.4d 7:2.8d 8:3.2d 9:3.6d.<br>Decimal digit express the choice of zero set 0.<br>Decimal digit=0 no zero set at start operation.<br>Decimal digit >1 zero set at start operation 20%<br>F·S.<br>For example: AUtP=10<br>(AUtP=10 when leaving the factory) |

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

## 7. CALIBRATION

| Step | Operation | Displaying | Contents |
|---|---|---|---|
| 1 | Press FN<br>Press → | CAL SP<br>CAL 00 | Enters calibration.<br>Zero the scale. |
| 2 | Press FN | ------<br>3000 | Starts zero calibration and wait for calibration to complete. |
| 3 | Load the standard weight for F·S on the platform, press FN | ------<br>3000 | Starts calibration and wait for calibration to complete.<br>*If the standard weights can't reach to F.S.,2\|3 is recommended to use, press → and ↑ (x10) to change the numbers displayed ( the weight value of the weight you use) and then press FN to confirm. |

Calibration must be done once the parameters are configurated.
Pressed FN 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 FN key to return to weighing mode.

## 8. ZERO

When the weight is stable, press →T← (0) key for two seconds to set the zero point and zero the display. The Zero status LED is turned on.

## 9. TARE

Press → key, set tare with → and ↑ (x10) key, then press →T← (0) key. The input data is tare.
The Tare status LED is turned on.

## 10. MANUAL WEIGHT ACCUMULATION

When weight is stable, press M+ (PRINT) 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. 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 FN | n 12 | To display times of accumulation. |
| 2 | Press FN | AUt 0 | The selection of manual/automatic accumulation<br>AUt = 0, manual accumulation<br>AUt = 1, automatic accumulation and print when Auto weight is added, indicator is lit.<br>AUt=2, automatic memorize displayed value when weight is added. Accumulate and print final stable values after load down to below 20 d. Auto indicator is lit.<br><br>AUt=3,dynamic weighing method. At weighing >20d: the buzzer sounds "du" and lock is displayed for 6 seconds. Then lock is released for weighing <20d;<br>automatic accumulation and print. Suggest Flt>30. Auto indicator is list.<br><br>AUt=4, peak value fixed weighing method. At weighing>20d, the buzzer sounds "du" and lock is displayed. When weighing <20d, fixed data displays with flash, automatic accumulation and print. Lock can be released by pressing any key. Auto indicator is lit.<br><br>AUt=5,dynamic weighing method. Manual accumulation and print.<br>AUt=6, peak value fixed weighing method. Manual<br>accumulation and print.<br>AUt=7, counting function. *note |
| 3 | Press →0 x10 | AUt 0 | Digits displays with flash. |
| 4 | Press →0 x10<br>Press →0 x10<br>Press →0 x10 | AUt 0<br>AUt 1<br>AUt 2<br>AUt 3 | Move binking digit to the right bit.<br>e.g. AUt=3 expresses dynamic weighing method. |
| 5 | Press FN | 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, wich must be <200 pieces, i.e. between 1 to 199, is put on the scale. Press → and →0 x10 input quantity of the sample (e.g.30), Cnt030 is displayed.
Press FN ,confirm the completion of sampling. Weighing status is redisplayed. Sampling is memorized even with power off.

| Step | Operation | Displaying | Description |
|---|---|---|---|
| 1 | Place sample | | Place selected sample, weight: 27, quantity: 30. |
| 2 | Press →<br>Press → | Cnt000<br>Cnt000 | Ready to input sample's quantity. Decimal digit display with flash. |
| 3 | Press ↑ x10<br>Press ↑ x10<br>Press ↑ x10 | Cnt010<br>Cnt020<br>Cnt030 | |
| 4 | Press FN | 27 | Display sample's weight: 27 FN is a confirmation key, sample collection completed. |
| 5 | Press ↑ x10 | C 30 | Display sample's quantity, ↑ x10 is change-over key |

(2) Counting operation: place the object on scale, weight is displayed, press ↑ x10 , C 255 is displayed, and the display changes over to the quantity of the object. When the display is stable, press M+ PRINT , accumulate the weight and quantity. Accumulatin can be done only at counting status.

| Step | Operation | Displaying | Description |
|---|---|---|---|
| 1 | Place object | 230 | Object weight: 230 |
| 2 | Press ↑ x10 | C 255 | Object quantity: 255 |
| 3 | Press M+ PRINT | n 4<br>C 255 | Display after 1.5 seconds at counting status. |

Status

| Step | Operation | Displaying | Description |
|---|---|---|---|
| 1 | Press FN | C 1203 | Display the total quantity of the object: 1203 |
| 1 | Press ↑ x10 | H 0 | Display accumulated weight 4 digits higher. |
| 1 | Press ↑ x10 | L 1085 | Display accumulated weight 4 digits lower = 1085 |
| 1 | Press ↑ x10 | C 1203 | Back to counting status. |
| 1 | Press →T← 0 | C 0 | Delete accumulated quantity. |

(3) Accumulate inquires and delete: both at weighing status.

## 12 . CLEAR MEMORY

Press →T← key, if memory has previously been cleared the display will show n 0 followed by zero weight when the FN key is pressed.

## 13 . HOW TO SET DATUM

Press → key, move and blinks the current digit to.
Press ↑ key increment the current digit to the next available value.

## 14 . BATTERY CAPACITY

- When the indicator is being poer on/off, battery capacity will be displayed PBt 85 for 1.5 seconds.
- When the battery capacity is less than 20%, the display will start to blink, power off the indicator to avoid over discharging battery or connect the external main power suply.
- A full charged battery life is approximately 30 hours.

## 15 . 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 FN key 2 seconds at least.

## 16 . CONNECTION TO MINI-PRINTERS

Connect serial port printer type UP-16TS as follows:

| Indicator 9 pin hole | | Serial Port Printer 25 pin needle |
|---|---|---|
| 3 | TXT | 2 |
| 5 | GND | 7 |

* Note: Before connection to printer, communication address is set as Adr=1; baud rate is set as b=9600.

Print operation with serial port printer is as follows:
16.1 Print: at weighing status, weighing data >20d and display is stable, press M+ PRINT , weighing sheet is printed out. The second printing can be operated only when the weighing data is back to <20d.

16.2 Accumulated print: at weighing status, press FN , then press M+ PRINT , accumulated printing can be operated.

16.3 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 printing | Accumulation printing |
|---|---|
| No:1 (serial number)<br>Gross: 3940 kg (gross weight)<br>Tare: 2000 kg (tare weight)<br>Net: 1940 kg (net weight) | No:9 (serial numbe)<br>W: 8225 kg (accumulated weight) |

## 17 . HIGH RESOLUTION DISPLAY MODE

In this display mode, press 

,switch to high resolution display mode.(10timesnormaldisplay)
The last decimal point is light on. Press 

key return to normal weight displaymode.

## 18 . PRECAUTION

- Indicator should be far away fromheat resourcewhile using.
- Do not place the indicatorin the dusty surroundings or the site vibrant.
- Can not 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 deviceor connect with wire without any expert advice.Incase any malfunction of indicator occurs, pleasesent the indicator for maintenance.
- The indicator will charge the internal battery at all times when it is connected to the main power.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