JWI / JPS / JS series
IDS931

User's Manual

Chapter

1 · Summary

The JWI/JPS/JS series is a multi-function weighing indicator that offer flexibility together with good features! Ideal weighing indicator for clients that want stability ,good quality together with a competitive cost .

2、 INTRODUCTION:

Thank you for your purchase of this high precision electronic weighing indicator / scale of our company. The main features of the Weighing Indicator / scale is :-
1. The microprocessor in this indicator features
   A: Automatic zero point tracking function.
   B: Selection of the ON/OFF of the zero tracking
   C: Selection of the baud rate of the RS232 interface
   D: The beep(alarm) function can be activated when the weighing reach the HI –LO limits .Multiple choices for checking functions .
   E: Tare function
   F: Pre-tare function
   G: Automatic tare function
   H: The weight accumulation function
2. Easy operating and water-resistant membrane keypad
3. Easy to read backlight HTN- LCD display.(JWI588 uses LED screen)
4. Simple counting function is applicable.
5. Tare range is unlimited.
6. Bi-direction RS-232 signal output are applicable.
7. AC power or rechargeable battery is applicable. The battery's checking system can check automatically whether or not the battery is recharged.
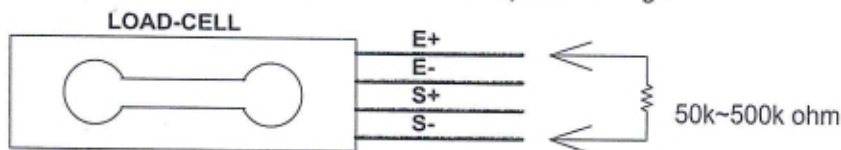8. Fast, stable and accurate display reading with simple operation.

3 · PRECAUTION :

1. Full charge the battery after unpacking the scale.
   Recharge the battery: *When battery symbol appears on the LCD display, charge the battery with AC power cord plug in, the indicator of charge will light up in red, when it becomes green means charge completed. (It takes about 8 hours to full charge the battery.)*
2. Install the equipment on a level and stable surface.
3. Do not install the equipment near the air conditioning or a vibrating machine.
4. Install the equipment in an environment with steady temperature(-5℃~40℃), prevent from rapid temperature changes.
5. Independent AC outlet for this equipment is recommended, check the voltage before plug in.
6. Warm up the equipment for 15 minutes before use.

4 · CONNECTION of L/C and JWI-586:
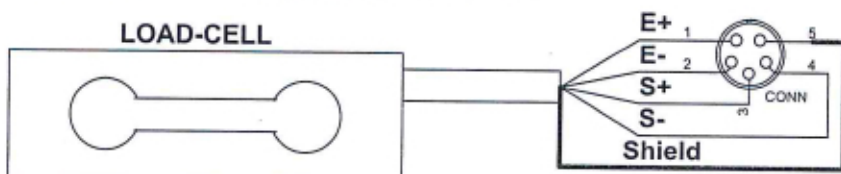
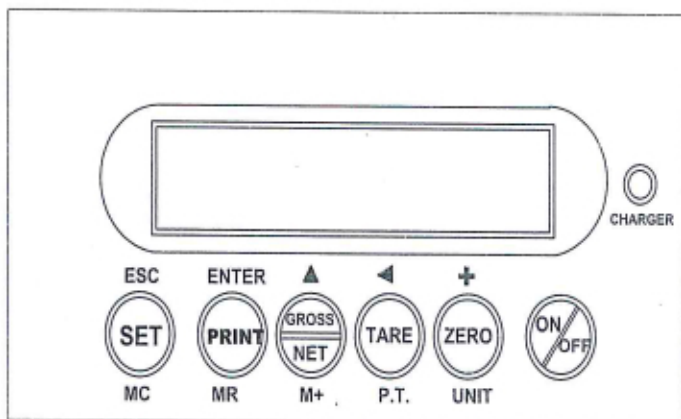| LOAD CELL CONNECTION	PIN	SIGNAL
	1	E+
	2	E-
	3	S+
	4	S-
	5	SHIELD

The solution of the LOAD CELL when its output is too high :

LOAD-CELL

E+
E-
S+
S-

50k~500k ohm

The solution of the LOAD CELL when its output is too low :

LOAD-CELL

E+
E-
S+
S-

50k~500k ohm

5、KEYBOARD:

ESC	ENTER	▲	◀	✚	
SET	PRINT	GROSS/NET	TARE	ZERO	ON/OFF
MC	MR	M+	P.T.	UNIT	

CHARGER
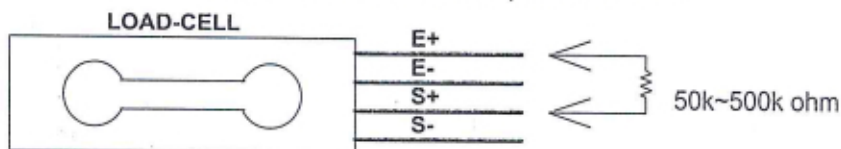
ITEM	OPERATION	FUNCTION
ON/OFF	☞ ON/OFF	Power switch
ZERO	☞ ZERO	Reset to zero
TARE	☞ TARE	Tare
G.W./N.W.	☞ G.W./N.W.	Change G.W & N.W
PRINT	☞ PRINT	Print
SET	☞ SET	Change the key and checking function setting
CHANGE THE UNIT	☞ SET ☞ ZERO	Change the unit
PRE-TARE	☞ SET ☞ TARE	Per- tare
ACCUMULATION	☞ SET ☞ G.W./N.W.	Accumulation
ACCUMULATION DISPLAY	☞ SET ☞ PRINT	Accumulation show
CANCEL THE ACCUMULATION	☞ SET ☞ SET	Cancel the accumulation

+ : digit+1

▲ : Function selection

ESC: leave the setup

◀ : digit displacement

ENTER: go into the setup

☞ : press the key once

6 · SETTING OF THE CAPACITY AND THE RESOLUTION(JWI sereies):

1. Turn Power on while holding down PRINT key and the scale goes into the function setting with **POS2** shown on the screen.

2. Press PRINT key and then SET key to set the maximum capacity

3. Press G.W./N.W. key in sequence to set the capacity as diagram shown below ; when **FrEE** appears on the screen ,press PRINT key and **000000** will shows on the screen where you can set the maximum capacity according to what you need; pressing ◀ key enables the digit to move leftwards and + key enables the digit to increase; press SET key to move to the next setting which is the setting of the resolution.

4. Press G.W./N.W. key to set the resolution [1.2.5.10.20.50] in sequence then press SET key to set the next one that's the location of the decimal fraction.

5. Press G.W./N.W. key to set the location of the decimal fraction in sequence. Then press ZERO key and **POS2** will shows on the screen. In the end press ZERO

key and this enables the indicator to return to the normal operation mode.

CAPACITY	RESOLUTION					
Max	1 Min. of graduation	2 Min. of graduation	5 Min. of graduation	10 Min. of graduation	20 Min. of graduation	50 Min. of graduation
300	1 / 300					
400	1 / 400					
500	1 / 500					
600	1 / 600	1 / 300				
800	1 / 800	1 / 400				
1,000	1 / 1000	1 / 500				
1,200	1 / 1200	1 / 600				
1,500	1 / 1500	1 / 800	1 / 300			
2,000	1 / 2000	1 / 1000	1 / 400			
2,500	1 / 2500	1 / 1250	1 / 500			
3,000	1 / 3000	1 / 1500	1 / 600	1 / 300		
4,000	1 / 4000	1 / 2000	1 / 800	1 / 400		
5,000	1 / 5000	1 / 2500	1 / 1000	1 / 500		
6,000	1 / 6000	1 / 3000	1 / 1200	1 / 600	1 / 300	
8,000	1 / 8000	1 / 4000	1 / 1600	1 / 800	1 / 400	
10,000	1 / 10000	1 / 5000	1 / 2000	1 / 1000	1 / 500	
12,000	1 / 12000	1 / 6000	1 / 2400	1 / 1200	1 / 600	
15,000	1 / 15000	1 / 7500	1 / 3000	1 / 1500	1 / 750	1 / 300
20,000		1 / 10000	1 / 4000	1 / 2000	1 / 1000	1 / 400
25,000		1 / 12500	1 / 5000	1 / 2500	1 / 1250	1 / 500
30,000		1 / 15000	1 / 6000	1 / 3000	1 / 1500	1 / 600
40,000			1 / 8000	1 / 4000	1 / 2000	1 / 800
50,000			1 / 10000	1 / 5000	1 / 2500	1 / 1000
60,000			1 / 12000	1 / 6000	1 / 3000	1 / 1200
75,000			1 / 15000	1 / 7500	1 / 3750	1 / 1500
80,000				1 / 8000	1 / 4000	1 / 1600
100,000				1 / 10000	1 / 5000	1 / 2000
120,000				1 / 12000	1 / 6000	1 / 2400
150,000				1 / 15000	1 / 7500	1 / 3000
200,000					1 / 10000	1 / 4000
250,000					1 / 12500	1 / 5000
300,000					1 / 15000	1 / 6000
400,000						1 / 8000
500,000						1 / 10000
600,000						1 / 12000
700,000						1 / 14000
750,000						1 / 15000

7 · CONNECTION of the INPUT/OUTPUT DELICACY:

The loadcell input sensitivity is 0.13u V/D or more . The input sensitivity indicates the variation in the loadcell output voltage required to change the display one point on the display.; when designing a weighing system, the loadcell 's output voltage must accord with the input V/D of the weighing display so all must accord with the following formula . In order to achieve a system with a stable performance , it should be designed so that sensitivity is as great as possible.

One LOAD CELL IN USE:

Formula : $0.13 \leqslant [(5000 \times B \times D) \div A]$

A: LOAD CELL's rated load capacity.
B: LOAD CELL's rated output m V/V
D: Minimum   divison
5000: LOAD CELL's excitation voltage in milivolt / the weighing display offers 5V=5000m V
0,2 is the input sensitivity in V.

Multiples LOAD CELL(the number is N) IN USE:

Formula : $0.2 \leqslant [(5000 \times B \times D) \div (A \times N)]$
A: LOAD CELL's rated load capacity.

B: LOAD CELL's rated output m V/V
D: Minimum   divison
5000: LOAD CELL's excitation voltage in milivolt / the weighing display offers 5V=5000m V
N: LOAD CELL's number.
0,2 is the input sensitivity in V.

EXAMPLE:
LOAD CELL's rated load 750kg,
LOAD CELL's rated output 3m V/V
The scale need: the maximum capacity 300kg ; the minimum of resolution 0.05kg

Estimation as the following:

$0.13 \leqslant [(5000 \times 3 \times 0.05) \div 750]$
conclusion: A=750   B=3   D=0.05   N=1
All data comply with the formula and there is therefore no problem with the design of the weighing application.

When a lever is used, the lever ratio should be taken into consideration.

$n =$ The lever ratio $0.6 \leqslant 5000 \times B \times D \div (A \times N \times n)$

8、FUNCTION SETTING:

Turn power on while holding down $\boxed{SET}$ key and the indicator goes into the function setting with $\boxed{\quad CAL \quad}$ shown on the screen. Pressing $\boxed{SET}$ key in sequence will allow you to move through the different settings .

Display	Function illumination	Selection of function setting	Detailed
$\boxed{CAL}$	Calibration		Remark 1 of page 7
$\boxed{ON/OFF_{kg}}$	Selection of unit	ON/OFF	Remark 2 of page 7
$\boxed{Init =_{kg}}$ Default Kg	Selection of initial unit	Kg/g/lb/t	Remark 3 of page 7
$\boxed{UM\ OFF}$ Default ON	Selection of HI / LO memory function	* ON/OFF	Remark 4 of page 7
$\boxed{Fil.1}$ Default 2	Selection of digital filtering setup	1/2/4/8	Remark 5 of page 7
$\boxed{Aut.No}$ Default 60	Selection of auto-power off	NO/5/10/30/60	Remark 6 of page 7
$\boxed{Lit.Aut}$ Default Aut	Selection of backlight	OFF/ON/AUT	Remark 7 of page 7
$\boxed{Zero.0}$	Selection of zero range display	0/1/2/3/4/5	Remark 8 of page 7

Default	2		
BAu.96	Selection of baud rate of RS-232	2400/4800/9600	Remark 9 of page 8
Default	9600		
Prt.Pr	Selection of print method	Pr/St/Co	Remark 10 of page 8
Default	Co		
Peri			Remark 11 of page 8
P C	Selection of external setting	PC/SH-16/CX/YZ/ET/GODEX/SH-24 /TP-24/AX-III/EZ2-S/TDP643	Remark11 of page 8
Default	PC		
Bp.Un	Selection of beep of check function	Un/In/no/Lo/3b/OFF	Remark 12 of page 8
Default	LO		
Reset	Return to the initial setting in the factory		Remark 13 of page 8
TrA.ON	Function of the zero tracking	ON/OFF	Remark 14 of page 8
Default	ON		
A.t.OFF	Automatic tare function	ON/OFF	Remark 15 of page 8
Default	OFF		
M OFF	Selection of checking & memory function	ON/OFF	Remark 16 of page 8
Default	OFF		
rtc.OFF	RTC function	ON/OFF	Remark 17 of page 8
Default	OFF		
0- OFF	Zero-Offset function	ON/OFF	Remark 18 of page 8
Default	OFF		

Remark 1 :

When $\boxed{\text{CAL}}$ shown on the screen, no object must be on the pan .press $\boxed{\text{TARE}}$ key to perform the zero calibration $\boxed{\text{zero CAL}}$ will shown on the screen. When zero point calibration is completed the screen will show next $\boxed{0000.00 \text{ kg}}$ for the span calibration. Press $\boxed{\blacktriangleleft}$ key to select the digit and $\boxed{+}$ key to change the weight. Put the corresponding weighing mass (number represents the weight of the weighing mass) on the pan and then press $\boxed{\text{SET}}$ key to end the setting. $\boxed{\text{CAL kg}}$ shown on the screen means the scale goes into the SPAN calibration, when beep sounds and with $\boxed{\text{PASS kg}}$ shown on the screen means the completion of span calibration . Then press $\boxed{\text{ZERO}}$ key to leave the setting function and return to the normal operation mode; press $\boxed{\text{SET}}$ key to set the following function continually.

Remark 2 :

 ON kg shows on the screen and then press TARE key to set the unit in sequence . "**ON**" means this unit is in use; press G.W/N.W. key and **OFF** kg shows on the screen. "**OFF**" means this unit isn't in use. Press G.W/N.W. key can switch "**ON**" and "**OFF**"

Remark 3 :

 Init= kg shown on the screen represents the present initial unit. Press TARE key to select the wanted unit . and the chosen unit will appear on the screen when you power on next.(pcs and % cannot be the initial unit).

Remark 4 :

 UM OFF shows on the screen and press TARE key to select   the memory function of HI / LO (pcs and % cannot be the initial unit)."NO" or "YES" can be chosen.

Remark 5 :

 Fil 1 kg shows on the screen and press TARE key to select 1 or 2 or 3 or 4, the larger number means slower reaction speed but better filtering effect.

Remark 6 :

 Aut.NO kg shows on the screen and press TARE key to set the time of power off automatically. there are 5,10,30,30,60min to be chosen.

Remark 7 :

 Lit.Aut shows on the screen and press TARE key to select in sequence the backlight options. There are ON,OFF, Auto (light up only if the weight is more than 9 times of the resolution) to be chosen..

Remark 8 :

 ZERO.0   shows on the screen and press TARE key to set the zero range ; there are 0~5 classes to be chosen(the bigger, the wider).

Remark 9 :

 bAu.96   shows on the screen and press TARE key to set the baud rate ; there are 2400,4800 and 9600 to be chosen..

Remark 10 :

 Prt.Pr shows on the screen and press TARE key to set the print mode . there are Pr,St,Co to be chosen.(Pr means data sent when key pressed; St means data sent when the reading is stable; Co means data sent continuously.

Remark 11 :

 Peri then **PC** show on the screen and press TARE key to set the

external equipment.   There are PC, ET, SH-24, YZ、CX, TDP-643 to be chosen.(ET is large-scale external connection LED, which demanded to send out continuously)

Remark 12 :

| BP.Un | shows on the screen and press | TARE | key to set the checking function .
There are Un, In, no, Lo, 3b, OFF to be chosen.

Un – HI   Beep sounds (when reading are over the setting of Hi limit).
In –OK   Beep sounds(when reading are within or equal to the setting of Hi and Lo limit.)
No – Beep sounds when reading are out of the setting of Hi and Lo   limit   .
Lo – Beep alert when reading are less than the setting of Lo limit.
3b---three phases checking(beep silent)
OFF—function doesn't work

Remark 13 :

| RESET | shows on the screen and press | G.W./N.W. | key to return to the initial situation setting from the factory.

Remark 14 :

| tr A.ON | shows on the screen and press | TARE | key to set zero tracking function . There are ON , OFF to be chosen.

Remark 15 :

| At. OFF | shows on the screen and press | TARE | key to set the memory of the Auto –Tare function . There are ON , OFF to be chosen.

Remark 16 :

| M OFF | shows on the screen and press | TARE | key to set in circle the memory function or not. There are ON , OFF to be chosen.

Remark 17 :

| Rtc. OFF | shows on the screen and press | TARE | key to set in circle the rtc function or not. There are ON , OFF to be chosen.

Remark 18 :

| 0- OFF | shows on the screen and press | TARE | key to set in circle the Zero-Offset function or not. There are ON , OFF to be chosen.

Remark :

After the above setting, press | ZERO | key can end the setting function and turn into the normal weighing operation mode automatically; or press | SET | key to return to the first step after remark 16.

9、OPERATION(NORMAL POWER ON)

Remark:

Single calibration must be processed before the normal power on. The period between

the first $\boxed{SET}$ key and the next key must be within 3 seconds, otherwise only the function of the $\boxed{SET}$ key is acknowledged

Unit Switch

Press $\boxed{SET}$ key and then $\boxed{ZERO}$ key to switch the weighing unit.

Pre-tare:

Press $\boxed{SET}$ key and then $\boxed{TARE}$ key to turn into the pre-tare mode with $\boxed{\textbf{XXXXX}_{kg}}$ appearing on the screen .press $\boxed{\blacktriangleleft}$ key to choose the digit and $\boxed{+}$ key to change the weight. after the setting, press $\boxed{PRINT}$ key to enable the scale to go into the operation mode . Pre-tare value appear in the display .

Accumulation:

Press $\boxed{SET}$ key and $\boxed{G.W/N.W}$ key and then $\boxed{_{M+}\textbf{XXXXXX}\ _{kg}}$ shows on the screen(accumulation cannot process until the scale is stable with load on the pan)

Accumulation display:

Press $\boxed{SET}$ key and $\boxed{PRINT}$ key and then $\boxed{_{zero}\textbf{ALLXX}_{kg}}$ shows on the screen. The next screen display $\boxed{\textbf{XXXXXX}_{kg}}$ and after a while the scale return to the operation mode.

Cancel the accumulation:

Press $\boxed{SET}$ key and then $\boxed{SET}$ key to cancel all the accumulation value.

Simple counting:

Press $\boxed{SET}$ key and then $\boxed{ZERO}$ key in sequence and wait for $\boxed{_{zero}\quad\textbf{0}\ _{pcs}}$ appearing on the screen. Then press $\boxed{G.W./N.W.}$ key for 3 seconds and $\boxed{\textbf{S=100}_{pcs}}$ shows on the screen; press $\boxed{G.W./N.W.}$ key to select 25,50,100 as the three kinds of sampling. Put the samples on the pan and press $\boxed{SET}$ key .counting begins when $\boxed{\textbf{CAL}}$ appears on the screen.

Percentage:

Press $\boxed{SET}$ key and then $\boxed{ZERO}$ key in sequence and wait for $\boxed{_{zero}\quad\textbf{0}\ _{\%}}$ appearing on the screen Then press $\boxed{G.W./N.W.}$ key for 3 seconds and $\boxed{\textbf{S=100}_{\%}}$ shows on the screen; press $\boxed{G.W./N.W.}$ key to select 25,50,100 as the three kinds of sampling. Put the samples on the pan and press $\boxed{SET}$ key calculation of percentage begins when $\boxed{\textbf{CAL}}$ appears on the screen.

Checking:

Press $\boxed{SET}$ key for 3 seconds or more and $\boxed{\textbf{FUN}}$ appears on the screen; press $\boxed{\blacktriangle}$ key to switch Hi, Lo , NC and then press $\boxed{PRINT}$ key to go into the checking setting; press $\boxed{\blacktriangleleft}$ key to choose the digit and $\boxed{+}$ key to change the weight. Press $\boxed{SET}$ key to

return to the **FUN** setting after finishing the setting; pressing ZERO key enables the indicator to the operation mode. **Hi** value must be bigger than **Lo** value, or Error9 will appears. **NC** means to cancel the checking setting.

Power save mode (JWI588 only):

When there is nothing on the scale and not and key pressed for 5 minutes, the indicator turns into Power save mode. Press any key for one second or put something to the scale could wave it up.

10 、 UNIT CONVERSION

1 lb=453.59237g
1 jin=500g
1 HK-liang=37.799375g
1 TW-liang=37.49995g

1 t=1000kg=1000000g

1HK-jin=16HK-liang
1TW-jin=16TW-liang

11 、 OUTPUT OPERATION

OP-01 : RS-232
OP-02 : Large LED display

12 、 SPECIFICATION:

TYPE	JWI-586
Input sensitivity	0.13u V/DIV
Input the range of the voltage	-0.5m V to 16.5 mV
LOAD CELL Excitation voltage	5V DC ±5%
LOAD CELL driving capability	Drive Up to max. 8 loadcells (350 ohm ,120m A)
Non-linearity	0.006% of full scale
Input the resistance	10M ohm or more
A/D converting	Δ-Σ
A/D internal resolution	700000 count
A/D conversion rate	8 times / set
Out display resolution	15000 count
LCD digit	6 digit
KEY amount	set, print, g. w./n. w. , tare, zero, on/off
Power standard	110V or 220V & 6V 4A Recharge BAT

13 、 Appendix 1 :

1 、 Error message

Message	Problem	operation
Err	Over/low display range	
Err2	Initial zero point over+30%（take 10% as a reference）	
-Err2	Initial zero point over-30%（take 10% as a reference）	
Err3	Over/low A/D resolution range	
Err4	EEPROM Chksum error	
Err5	Over load (max: capacity +9e)	
Err8	Setting of operation unit and initial unit incorrect; (only % and pcs are settled as operation)	

Err9	Set LOW value ≥ Hi value	
Over	Accumulation exceeds 99 times	
Battery symbol	Low battery alarm	

2、Trouble shooting:

Where	Possible Error message	Trouble shooting
Power on	Err2,-Err2	Check and remove the object from weighing pan or malfunction of LOAD CELL
Power on	Err3,-Err3	Check if A/D or LOAD CELL malfunction
Power on	Err4	Beep alarm. switch power off and power on again, or make the calibration
Power on	Battery symbol	Charge the battery
Normal weighing mode	Err5	Check if weighing object over the capacity +9e

14、Appendix 2:
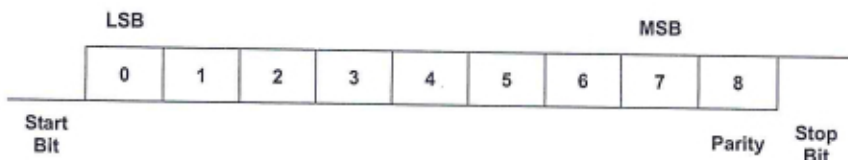
RS-232 OUTPUT FORMAT

Baud Rate : 2400、4800、9600
Data Bit : 8
Parity : N (None)
Stop Bit : 1
Code : ASCII
Bit Format :

	LSB								MSB	
	0	1	2	3	4	5	6	7	8	

Start Bit   Parity   Stop Bit

Data Format :

1、kg

G/N	.	W	.	:	+/-							k	g	CR	LF

Weight
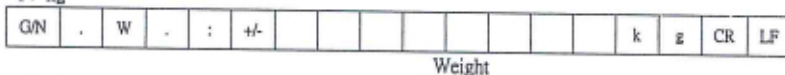
Example:
N.W. : +2.2352kg
G.W. : +2.2352kg

2、g

G/N	.	W	.	:	+/-							g	CR	LF

Weight
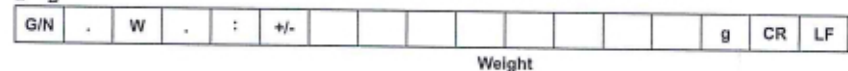
Example:
N.W. : + 1235.2g
G.W. : + 2235.2g

3、lb

G/N	.	W	.	:	+/-							l	b	CR	LF

Weight
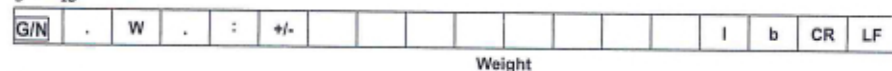
Example:
N.W. : + 1.2352lb
G.W. : + 2.2352lb

4、lb-oz

G/N	.	W	:	:	+/-					-	l	b				o	z	CR	LF

Weight

Example:
N.W. : + 3- lb12.235 oz
G.W. : + 3- lb12.235 oz

5、 metric ton

G/N	.	W	.		:	+/-						_	.						CR	LF

<div align="center">Weight</div>

Example:
N.W. : + 12.645t
G.W. : + 12.645t

6、 pcs

T	o	t	a	l	:	+/-							p	c	s		CR	LF

<div align="center">pcs</div>

Example:
Total : +   645 pcs

7、 %

+/-						%	CR	LF

<div align="center">%</div>

Example:
+ 24%

YZ Output Format:

```
ST,NT,-  200.00kg
ST,GS,+  100.00kg
US,NT,-  200.00kg
US,GS,+  100.00kg
```

ST: stable, US:unstable;
NT: net weight, GS: gross weight.

G=GROSS   N=NET

RS-232 INPUT FORMAT

Baud Rate: 1200、2400 、4800 、9600
Data Bit : 8
Parity : N(None)
Stop Bit : 1
Code : ASC II
Command on computer:
'R'=READ   'Z'=ZERO   'T'=TARE
JWI588 could output only when using kg unit.

Printing Format (example : kg)

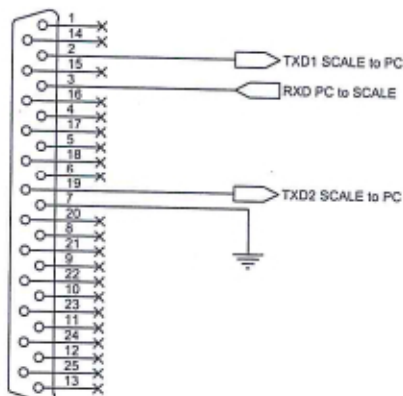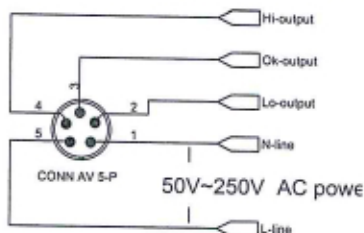| TP-24	SH-24	EZ2-S	AX-III	TDP-643

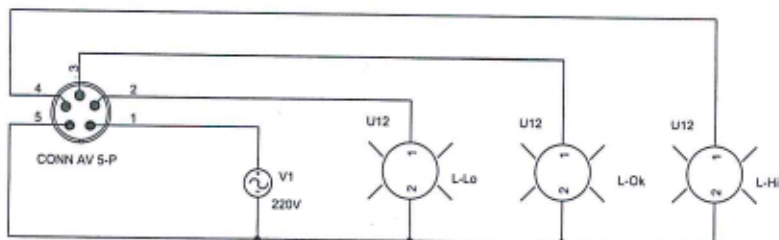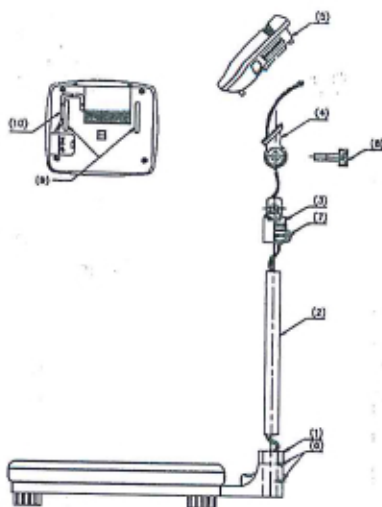| T.W.: +0.0000 kg N.W.: +1.6025 kg G.W.: +1.6025 kg	T.W.: +0.0000 kg N.W.: +1.6025 kg G.W.: +1.6025 kg	T.W.:+0.0000 kg N.W.:+1.6025 kg G.W.:+1.6025 kg	T.W. :+0.0000 kg N.W :+1.6025 kg G.W :+1.6025 kg	2002/6/3 15:24:13 T.W. :+0.0000 kg N.W :+1.6025 kg G.W :+1.6025 kg

RS-232 Connector

CONNECTOR DB25

SSR the setting of the indicator

CONN AV 5-P   50V~250V AC power

SSR the application examples of the indicator

15 · APPENDIX 3 :
ASSEMBLY

INTRODUCTION OF PARTS

(1) stem base	(2) stem	(3) bottom bracket	(4) upper bracket
(5) display	(6) screw	(7) screw	(8) plastic knob
(9) slot	(10) channel	(11) bolt	

■ Drill the Load Cell thread on the stem base(1) through the stem(2),insert the stem (2)in the hole of the screw base and lock the two screw(6) tightly.

■ Drill the Load Cell thread through the bottom bracket (3), insert the bottom bracket (3) in the stem(2) and lock the screw(7) tightly.

■ Drill the Load Cell thread through the upper bracket (4),jointing the display(5), and insert the upper bracket (4) in the slot (9) to the slot's half deepness 【the thread should be outside the upper bracket】.

■ Lay the Load Cell thread in the channel(10),assembling the bottom bracket (3) and the upper bracket (4) then inserting the upper bracket (4) in the slot (9) entirely, In the end lock the bottom bracket (3) and the upper brackets(4) via the plastic knob(8) and then insert the bolt in.

■ Use the plastic knob(8) to adjust the display to the optimum situation and then lock close to fix up.