SL-904 PANEL MOUNT INDICATOR USER'S MANUAL

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SAFETY PRECAUTIONS

For safe operation of the weighing indicator, please follow these instructions:

- Calibration inspection and maintenance of the indicator are prohibited by non-professional staff
- The indicator is a piece of static sensitive equipment; Please cut off power during electrical connections
- Touching the internal components by hand is prohibited
- DO NOT exceed the rated load limit of the unit
- DO NOT step on the unit
- DO NOT jump on the scale
- DO NOT use this product if any of the components are cracked
- DO NOT use for purposes other then weight taking
- To avoid damaging the battery do not keep charger plugged in once battery is fully charged
- Make sure the weight is not over the Max capacity as it could damage the load cell inside
- Material that has a static electric charge could influence the weighing. Discharge the static electricity of the samples, if possible. Another solution to the problem is to wipe both sides of the pan and the top of the case with an anti-static agent
- Plug into a wall outlet to avoid interference with other wirings
- Calibration may be required before weighing when the scale is initially installed or moved from a location

FEATURES

- LED 6 digit display
- Multiple weighing units: kg/lb/t
- Gross/Tare/Hold/Zero
- Check weighing feature

Technical Parameters

Hardware construction features

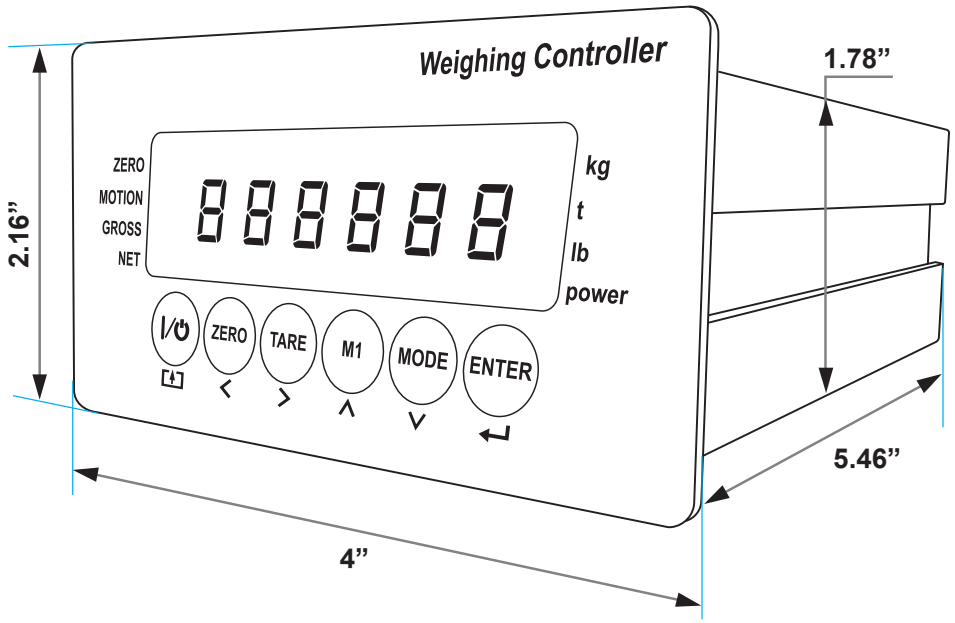
- Power supply: 24vDC
- Load cell excitation voltage: 5vDC±5%
- Load cell number: up to eight 350Ω
- Load cell sensitivity: 0~3.0mv/v
- Load cell connections: six wire
- Keyboard: six key
- Display: six digits red 7 segment LED display
- Relay output: 4 output, AC250v 5A
- Input: isolation voltage 2500V
- Analog output: 4~20mA/0~5v
- Serial port: RS232/RS485, baud rate 600~19200bit/s
- Operation temperature: -10 °C ~ +40 °C
- Operation humidity: ≤90%RH
- Storage temperature: -40 °C ~ +70 °C (32-104°F)
- Housing dimension: 92 x 45mm
- Front panel dimension: 102 x 55mm
- Trepanning dimension: 93 x 46mm

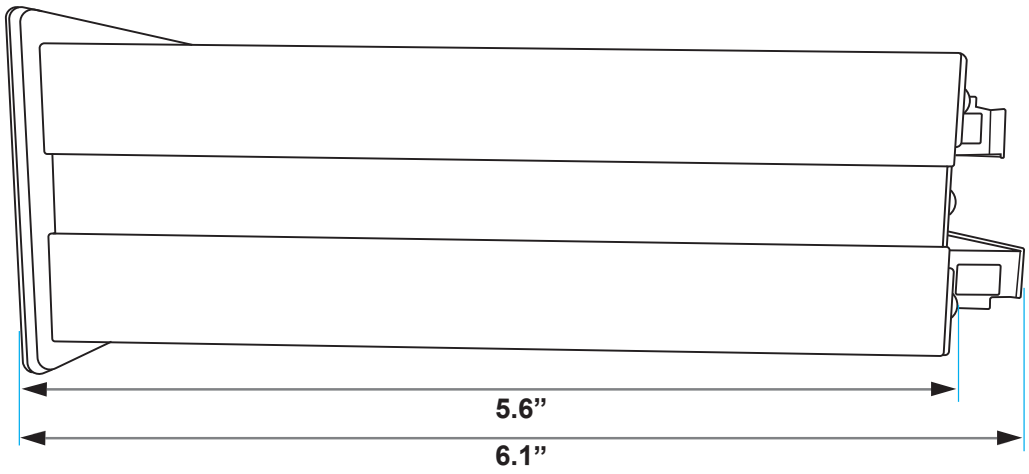
Software features

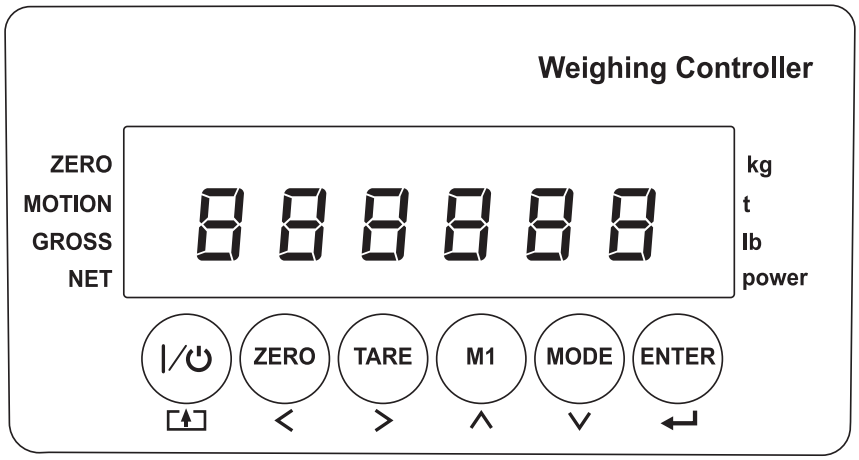
- Max sampling speed: 120SPS
- AD digital filter
- Digital calibration
- Batching or dosing functions

SPECIFICATIONS

FIGURE 1: INDICATOR MEASUREMENTS







DISPLAY AND KEY DESCRIPTION

I/⏻	Powers the Indicator On or Off if held for 2 seconds
ZERO	Zero's the scale
TARE	1. Resets the scale to zero when there is something on the scale (ex. Tare out the weight of a pallet to weigh only the product on it) 2. Clears the tare to see the gross weight (pallet + product)
M1	Displays Gross/Net weight
MODE	Setpoint parameter set
ENTER	Enter key
Zero	Indicates that you have zero'd the scale
Motion	The weight on the scale is unstable
Gross	Shows you are in Gross weight mode (includes tare); default mode
Net	Shows you are in Net weight mode (weight without tared weight)
kg	The weight is shown in kilograms
t	The weight is shown in tons
lb	The weight is shown in pounds
Power	Flashes red = low battery, Solid red = charging, Green = fully charged
Over	Flashes when weight is higher than set alarm parameter
Accept	Flashes when weight is within the set alarm parameters
Under	Flashes when weight is lower than set alarm parameter
⮉	Save and Exit
◀▶▼▲	Arrow keys
↵	Return/Enter

OPERATING INSTRUCTIONS

Power On

- Turn on the power by pressing the power button for 2 seconds. Once on, the scale will flash the voltage and then begin to auto-check and count down from 0-9 sequentially before entering the weighing mode
  Note: Anything on the scale before powering on will automatically be tared out.

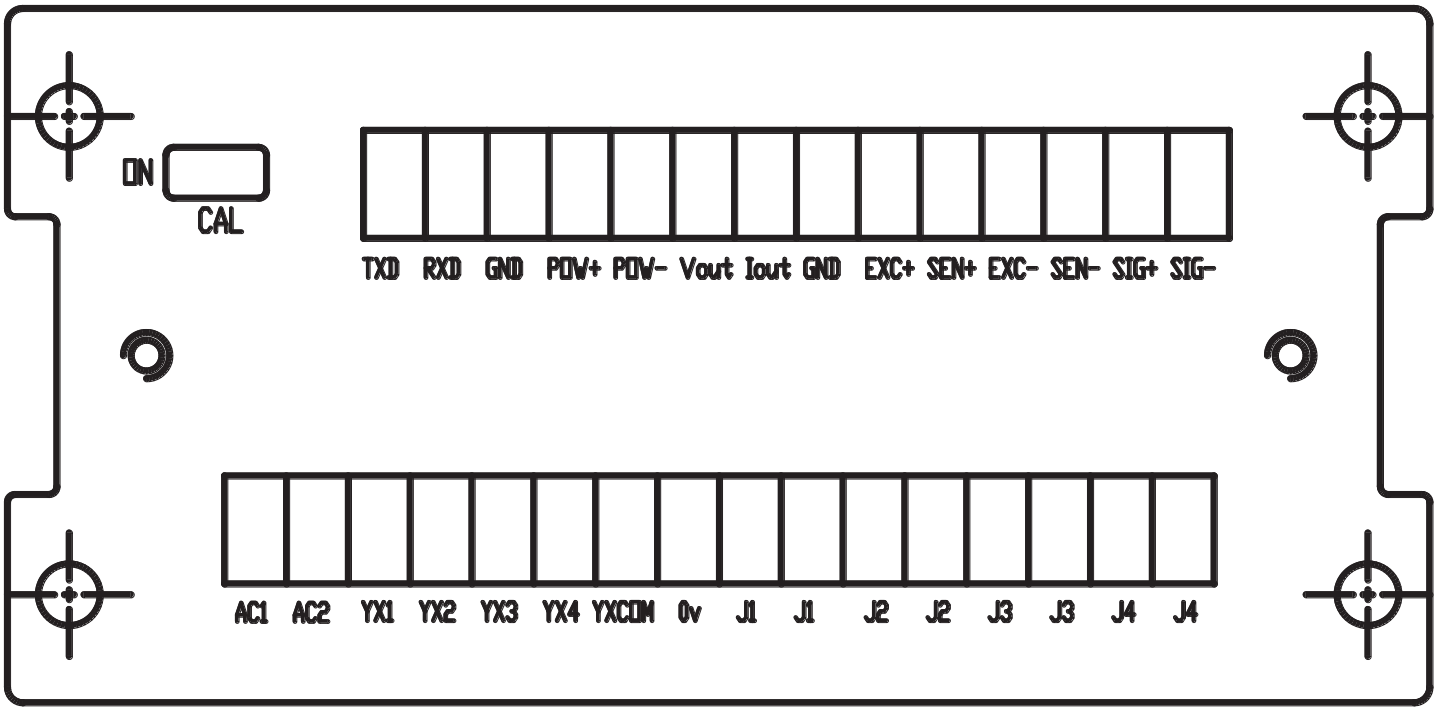
Zeroing

- The zero function is used only when the scale is empty and is not at gross zero due to material build up
- Pressing the ZERO key will reset your scale to 0
- Depending on what your manual zero range parameter is set to, you can zero out any number within your set selection, after that you will receive an error and will need to tare out the weight

Tare Function

- The Tare function is used when you only wish to see the current change in weight, not the entire amount of weight that is on the scale
- When the indicator is in gross mode (gross light is shown) pressing the TARE key will Tare the current weight on the scale and enter the net mode (net light shown)
- For example if you are using a container add the container to the scale, press tare and the display will show the gross light and reset back to 0
- Add your product to the scale to weigh without the weight of the container
- To exit Tare mode press the TARE key again to enter gross mode and you will see the total weight of the container and the product

Note: If you remove the container the scale will show the minus weight of the container



REAR PANEL

Connection definition:

Power: POW+ POW- for 24VDC, AC1 AC2 for 220VAC

Load cell: EXC+ SEN+ EXC- SEN- SIG+ SIG

Serial communications: TXD RXD GND for RS232, A B for RS485

Analog output: Vout Iout GND

Relay output: J1 J1 J2 J2 J3 J3 J4 J4

Input: YX1 YX2 YX3 YX4 YXCOM 0vTo exit Tare mode press the TARE key again to enter gross mode and you will see the total weight of the container and the product
Note: If you remove the container the scale will show the minus weight of the container

GENERAL FUNCTIONS

Function setup and operation procedure:

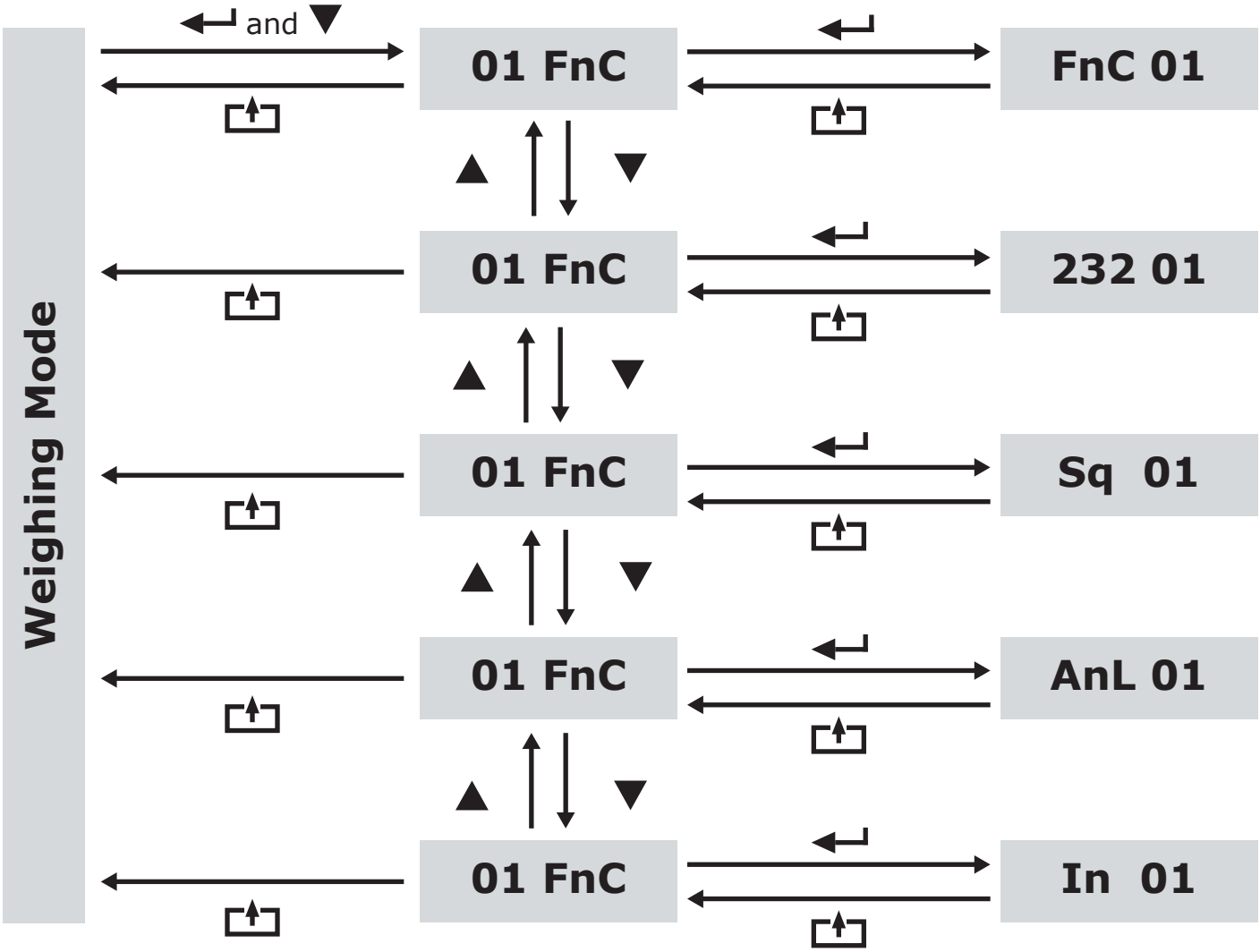
Function	Operation	Display	Remark
Enter calibration mode	Turn the calibration switch to "ON"	01 CSP	4
Enter function setting	Weight mode, press ◄┘ and ▼	01 FnC	3.3
Check weighing setpoint parameter setting	Weight mode, press ▼	1.FinAL	5
Enter to test mode	Turn power on, press ◄┘ and ⍐	1. dsp	7.1
Reset all parameters back to default	Turn power on, turn the calibration switch to "ON", press ◄┘ and ▼	i.ALL	7.2
Reset general function parameters back to default	Turn power on, press ◄┘ and ▼	1 FnC	7.2

Parameter Settings, Key meaning

Key	Meaning
⍐	Save and Exit
◄	Move the flashing digit to the left
►	Move the flashing digit to the right
▼	Increase the flashing digit
▲	Decrease the flashing digit
◄┘	Confirm

FUNCTION SETTINGS

Press ↵ and ▼ at the same time to enter the function settings
The screen will display "01 FnC" for function setting
Press ▲ to display "02 232" for serial port interface
Press ▲ to display "03 Sq " for weight comparison procedures
Press ▲ to display "04 AnL" for analog current output
Press ▲ to display "05 In " for external input interface
Press ↵ to enter the next menu level
Press ⏎ to save and exit out of this menu and restart



INDICATOR PARAMETER SETTINGS

To enter parameter settings, follow the procedure below:

1. Press ENTER ↵ and MODE ▼ at the same time for 2 seconds to enter the function settings
2. Navigate through the settings as shown in the table below by using the arrow keys and return keys as labeled under each indicator button
3. Press the ENTER ↵ key to enter/edit the parameter setting

Press the ⎋ key to save and exit settings at any time

01 FnC Function Parameter Code				
Function	**Item**	**Parameter**	**Description**	**Default**
Digital Filter 1	FnC 01	00 01 ... 10	Greater ↓ Less	03
Digital Filter 2	FnC 02	00 01 02 03	Greater ↓ Less	02
Rate for display rewrite	FnC 03	01 05 10 20 120	1 times/sec 5 times/sec 10 times/sec 20 times/sec 120 times/sec	10

02 232 Serial Port Interface				
Function	**Item**	**Parameter**	**Description**	**Default**
Baud Rate	232 01	00 01 02 03 04 05	600bit/s 1200bit/s 2400bit/s 4800bit/s 9600bit/s 19200bit/s	04
Transmit Mode	232 02	00 01 02 03 04	close serial port continuous print mode stable send command mode	01
Data Format	232 03	00 01 02	format 1 format 2 print format	00
Transmit Time	232 04	00 01 02 03	open 1 sec 2 sec 5 sec	00
Address for Multi-computer	232 05	00 01~99	Only one Address (bcd)	00

03 Sq Weight Comparison Procedures				
Function	**Item**	**Parameter**	**Description**	**Default**
Batching Mode	SQ 01	00 01 02 03 04	normal batch less-in weight comparison	01
Control Mode	SQ 02	01 02 03	manual start auto for custom	01
Comparison Format	SQ 03	01 02	net gross	01
Start Delay	SQ 04	00 01 ... 10	no delay 1 sec delay ... 10 sec delay	01
Stable Time	SQ 05	00 01 ... 10	no wait 1 sec wait ... 10 sec wait	03

04 Analog Current Ouput				
Function	**Item**	**Parameter**	**Description**	**Default**
Signal output	AnL 01	00 01 02	4~20mA current 0~20mA current 0~5v voltage	00
Data format	AnL 02	00 01	display weight gross weight	00
Maximum weight	AnL 03	010000	when max analog output weight	010000
Zero adjust	AnL 04	4mA/0mA/0v	Press ▲ or ▼ to adjust output	4
Linearity adjust	AnL 05	20mA/5v	Press ▲ or ▼ to adjust output	20
Output range limit	AnL 06	00 01	no limit limit	00

05 External Input Interface				
Function	**Item**	**Parameter**	**Description**	**Default**
INPUT1	IN 01	00 01 02 03 04 05 06	no function zero tare gross hold total print	01
INPUT2	IN 02			02
INPUT3	IN 03			05
INPUT4	IN 04			06

CALIBRATION SETTINGS

To enter calibration settings, follow the procedure below:

1. In weighing mode, make sure calibration switch is set to "ON"
2. The display will show "01 CSP" meaning you entered the calibration parameter code

- Press ↵ to enter the next step level
- Follow the steps in the parameters to set up your calibration

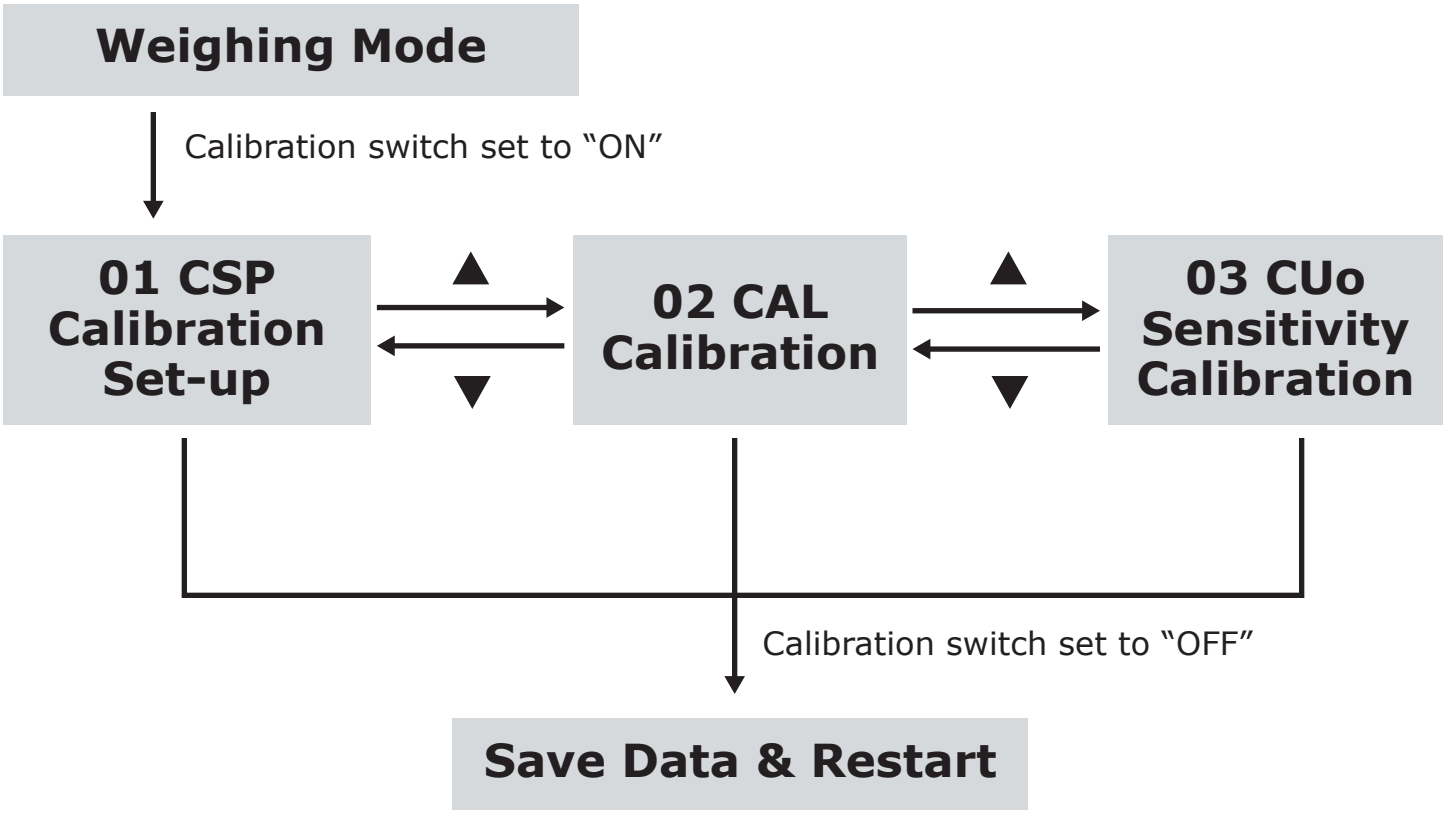
3. Press ▲ to display "02 CAL" General calibration

- Follow the steps to calibrate your scale

4. Press ▲ to display "03 CUo" Sensitivity calibration

- Follow the steps to set filters and manage the sensitivity of your scale

5. When you are done with calibrating, make sure to turn the switch to "OFF"
6. The screen will display "End" , save the data and restart



"01 CSP" Calibration Parameter Code

01 CSP Calibration Parameter Code				
Function	**Item**	**Parameter**	**Description**	**Default**
Unit	CSP 01	01 02 03	kg lb t	01
Decimal point	CSP 02	00 01 02 03 04	none 1 decimal point 2 decimal point 3 decimal point 4 decimal point	00
Division	CSP 03	01 02 05	division size	02
Max Capacity	CSP 04	010000	Max capacity	1000
Zero-Setting range	CSP 05	00 01 02	0 ±1% ±2%	02
Initial zero-setting range	CSP 06	00 01 02 05 10	0 ±1% ±2% ±5% ±10%	10
Automatic zero-setting range	CSP 07	00 05 10 20	0 0.5d 1d 2d	05
Automatic zero-setting time	CSP 08	00 01 02 03	0 1 sec 2 sec 3 sec	01
Stable time	CSP 09	00 01 02	fast medium slow	01
Stable range	CSP 10	01 02 05 10	1d 2d 5d 10d	02
Automatic zero	CSP 11	00 02 05 10 20	no -2d -5d -10d -20d	02
Preserved Menu	CSP 12			

"02 CAL" Calibration

In weighing mode set calibration switch to "ON"

Calibration press ▲

To enter calibration press ↵

Zero calibration press ↵
Skip zero calibration press ⇧
Display zero code

3 seconds

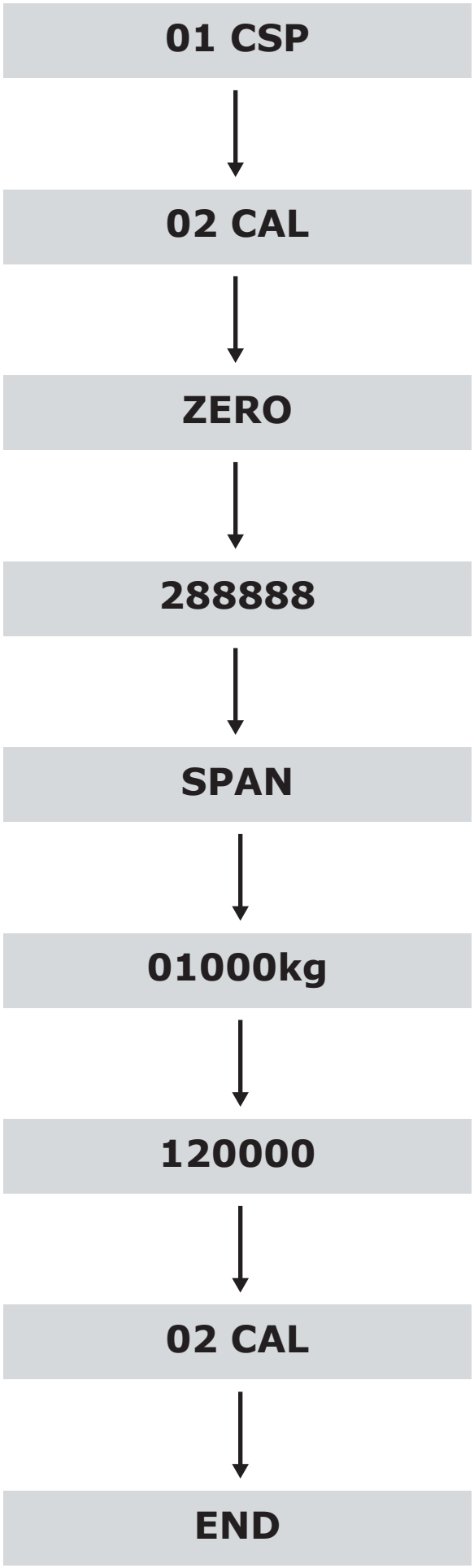
Weight calibration press ↵
Skip weight calibration press ⇧

Use ▲ ▼ ◀ ▶ to set the weight
Once the weight is stable press ↵

Sensitivity
3 seconds, calibration done

Set calibration switch to "OFF"
You are finished

Note: Zero calibration, can be no more than 5mv.



"03 CUo" Sensitivity Calibration

In weighing mode set calibration switch to "ON"

Sensitivity Calibration press ▼

To enter calibration press ↵

Zero calibration press ↵
Skip zero calibration press ⇧
Auto gather zero code
Or press ◀ to set zero code
to enter zero calibration ↵

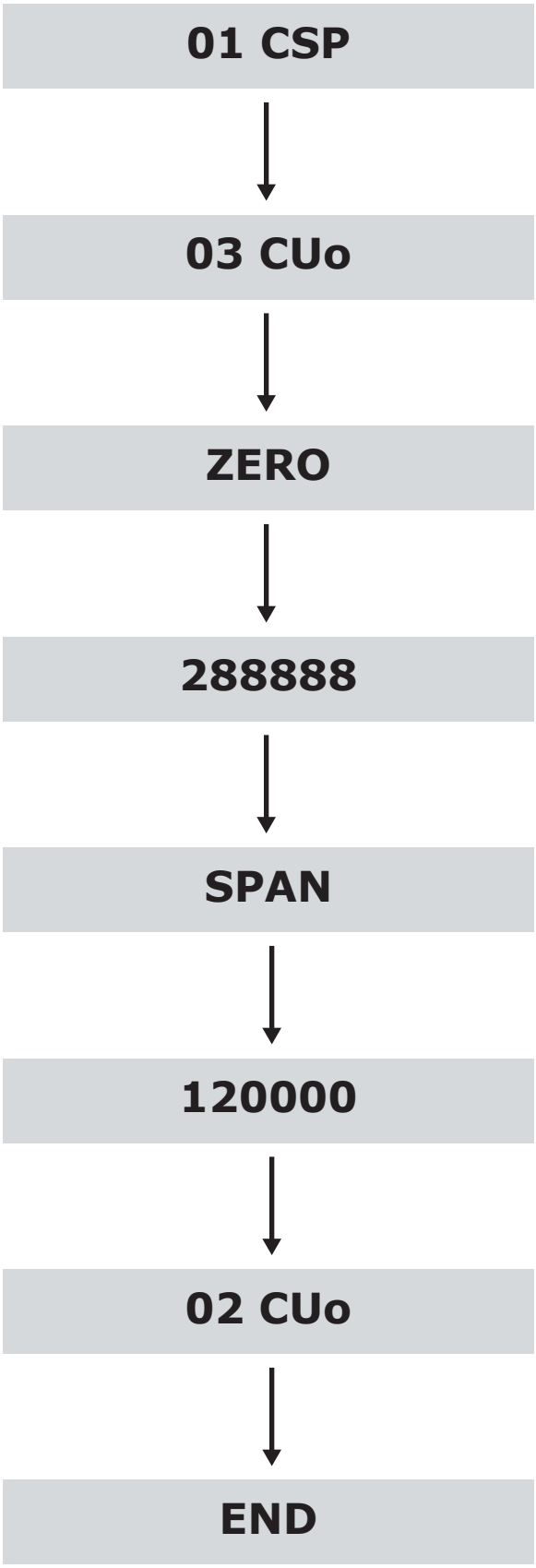
Sensitivity calibration press ↵
Skip sensitivity calibration press ⇧

Use ▲ ▼ ◀ ▶ to set the sensitivity
enter press ↵

Sensitivity calibration done

Set calibration switch to "OFF"
You are finished

Sensitivity = 100000 x load cell full scale output x weighing meter capacity /(N x Load cell capacity)



CHECK WEIGHING CONFIGURATION

Weighing mode press ▼ to go enter parameters

Display	Function
1. FinAL	Final value
2. SP1	SP1 value
3. SP2	SP2 value
4. SP3	SP3 value
F. FALL	Free fall value
6. oVer	Over value
7. UndEr	Under value
8. Z.bAnd	Zero band

Warning: set FinAL > SP1 > SP2 > SP3 > F. Fall

set Sq01=1: net weigh

Signal	Output Condition	Relay Output
SP1	Net ≥ Final-SP1	J1
SP2	Net ≥ Final-SP2	J2
SP3	Net ≥ Final-SP3	J3
Free Fall	Net ≥ Final-F.FALL	J4

Set Sq01=3:

Signal	Output Condition	Relay Output
HI	Net ≥ SP1	J1
OK	SP1 ≥Net ≥ SP2	J2
LO	Net < SP2	J3

CABLE CONNECTION MANUAL

Power

POW+	24VDC+
POW-	24VDC-
AC1	220VAC
AC2	220VAC

Load cell

EXC+
SEN+
EXC-
SEN-
SIG+
SIG-

NOTE: use 4-wire load cell need EXC+ and SEN+ short connect, EXC- and SEN- short connect.

Serial Port

TXD RS232 transmission RXD RS232 receive GND RS232 GND A RS485 A B RS485 B

Analog Output

Vout 0~5v voltage, load more than 1kΩ
Iout 4~20mA current, load span 100~500Ω
GND GND

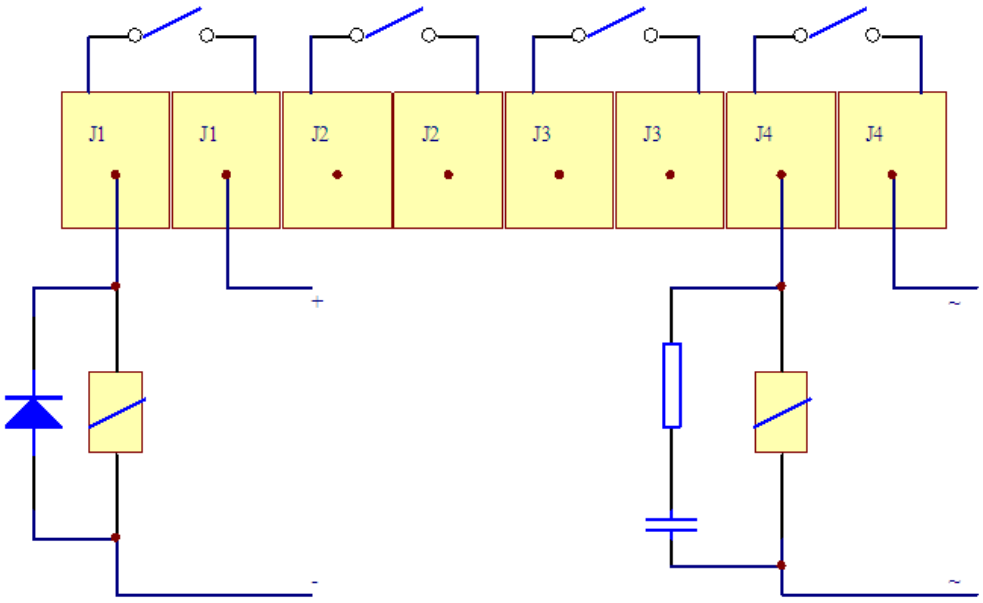
Relay Output

J1 J1 first group relay output

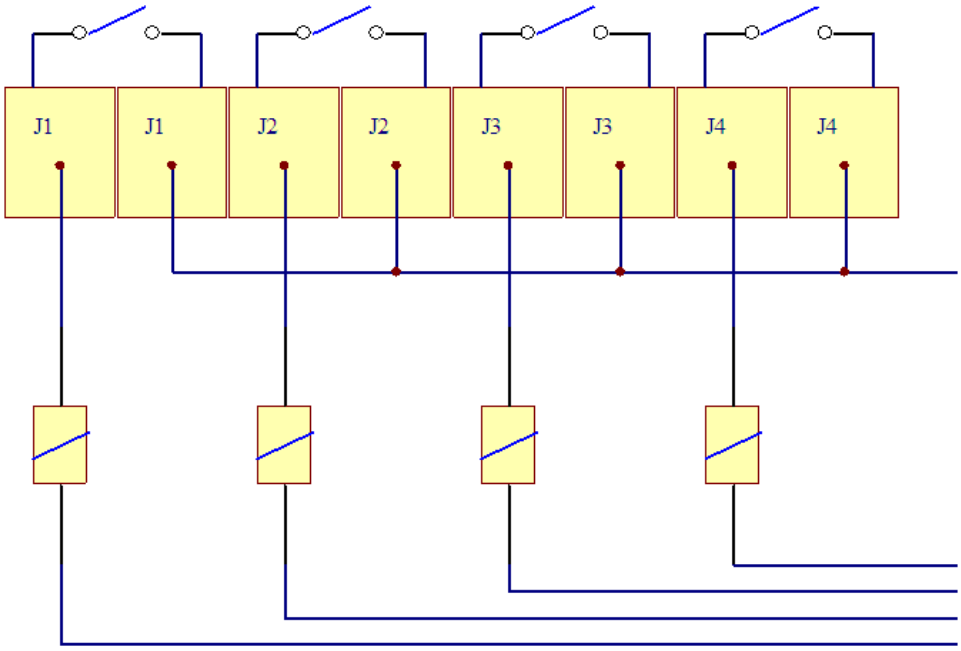
J2 J2 second group relay output

J3 J3 third group relay output

J4 J4 fourth group relay output



Relay Output Connecction diagram

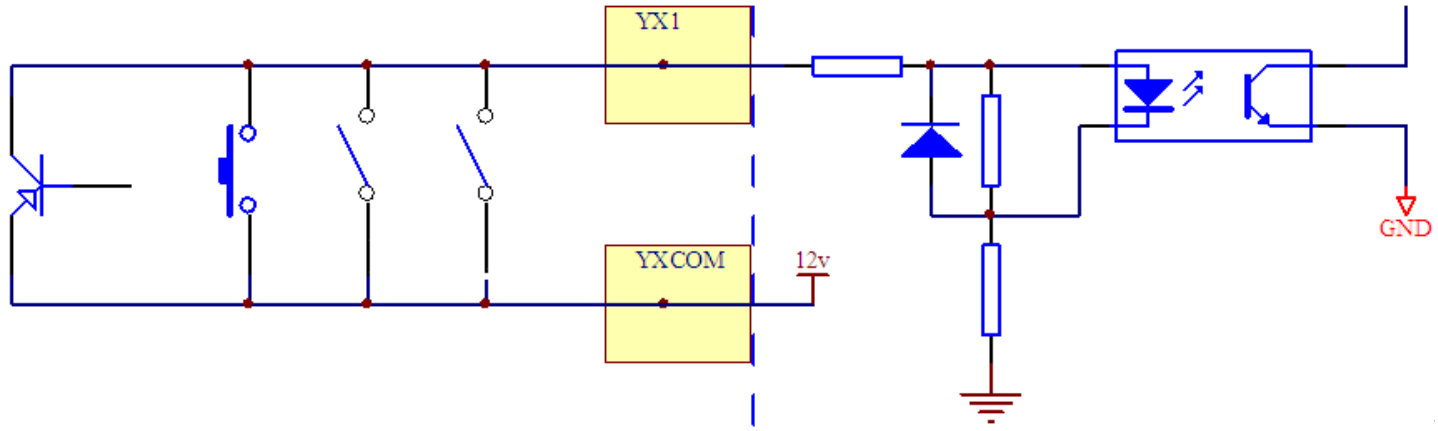


Common connection diagram

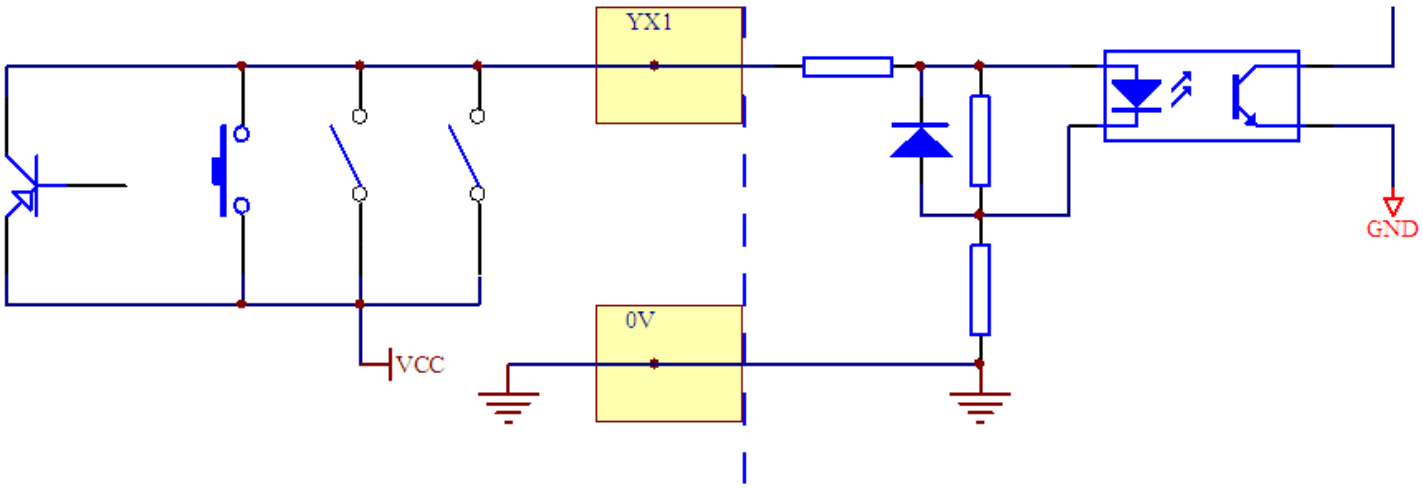
Note: Use common connection, put one of J1, J2, J3, J4 short connect.

Input

YX1	first group input
YX2	second group input
YX3	third group input
YX4	fourth group input
YXCOM	input common
0v	out connect power GND



Input Diagram



Out connect power input diagram

Note: Using out elctric power needs more than 3V battery charge, Out electric power less than 24V.

TROUBLESHOOTING

Error Codes

Error	Reason	Solution
UUUUU	1. Overload 2. Wrong connection with load cell 3. Load cell has quality problem	1. Reduce the weight 2. Check load cell connection 3. Inspect load cell; Check the input/output 4. See Q&A section
nnnnnn	1. Calibration is no good 2. Wrong connection with load cell 3. Load cell has quality problem	1. Make sure scale is level 2. Check load cell connection 3. Check load cell input and output resistance 4. See Q&A section
Err 1	During calibration, weight is not used or the weight is above the max. capacity	Use correct weight within the defined range
Err2	During calibration, the weight is below the minimum required weight	The calibration weight minimum is 10% of the max. capacity set in C04. Recommended to use 60%-80% of max. capacity if possible
Err3	During calibration, the input signal is negative	1. Check all wire connections 2. Check load cell 3. Recalibrate 4. PCB replacement needed if steps 1-3 fail
Err4	During calibration signal is unstable	After the platform is stable, start calibration
Err5	EEPROM Error	Change PCB
Err6	Exceed Zero Range	See Q&A section

CONTACT US

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