

CI-2001ASH weighing indicator operation manual

A. Normal operation

§1、 Power on and off

Press 【①】 key to turn on the power. Hold 【①】 key for two seconds to turn off the power.

§2、 Zeroing

When weighing is stable, press 【→0←】 key 2 seconds , the displaying value is set to zero and the indicator 【→0←】 is on.

§3、 Tare

§3.1、 Tare by goods

When the indicator 【→0←】 is off, the weight is stable and bigger than zero, Press 【→0←】 key, the displaying value is set to zero and the indicator 【→T←】 is on.

§3.2、 Clear tare

When the indicator 【→T←】 is on, press 【→0←】 key to clear tare and the indicator 【→T←】 is off.

§4、 Accumulation operation

Only in accumulation function permit state, the following operation is available.

In manual accumulation state, when weighing is stable and bigger than minimum weight , Press 【→】 key, the displaying value is accumulated and display the times of accumulation: 【n 26】 . If communication address is 99, the weighing value will be printed.

Note: Accumulation can only be used once in one weighing process. The next accumulation is available only after displaying value is less then minimum weighing value.

§5、 Unit switch

Only in unit switch permit state, the following operation is available.

Hold 【*】 key for 2 seconds, the weight unit is switched (kg / lb). When weight unit is lb, the indicator 【lb】 is on.

§6、 High resolution display

Only in high resolution display permit state, the following operation is available.

In weighing display state, press 【↑】 key to enter high resolution display (10 times), and the rightmost decimal point is light. Press 【↑】 key or 【 * 】 key again to enter normal weighing display.

§7、Accumulation value display and clear

Press 【*】 key, display the times of accumulation: [n 352] , 2 seconds later display the accumulated weight [23506.5] . If in count mode, it will display the times of accumulation: [n 52] , 2 seconds later display the count number of accumulation [12508] .

In above displaying state,

Press [→0←] key to clear accumulated value.

Press [→] key, the accumulated value will be printed if communication address is 99.

Press 【*】 key, display auto accumulation state: [Aut 0] .

The rightmost digital = 0 means manual accumulation.

The rightmost digital = 1 means auto accumulation when load is stable.

The rightmost digital = 2 means auto save displaying value when load is stable. When unload to less than minimum weighing value, the last stable value will be accumulated automatically.

Use [↑] key to select, press 【*】 key to enter normal weighing display.

Note: In auto accumulation state, the indicator [AUT] is on.

§8、Digital number input

Use [→] key to shift digital bit, the selected bit is flickering.

Use [↑] key to increase the value of the selected digital bit.

§9、Battery capacity

When power on or off, display: [Pbt 85] which means battery capacity is 85% of the full capacity.

§10、Battery charge prompt

When battery capacity is less than 30%, the indicator [] is on to remind charge in time.

When battery capacity is less than 20%, the indicator [] is flickering to remind charge immediately.

§11、Over-discharge protect

When battery capacity is less than 10%, the meter will be power off automatically to avoid battery over-discharge.

§12、Power saving mode

Auto power saving mode: If there is no weighing operation in 3 minutes and if auto power off mode has been set, this meter will display [-] to minimize the battery consumption.

§13、Auto power off

Auto power off mode: If there is no weighing operation in 15 minutes and if auto power off mode has been set, this meter will be turned power off automatically.

§14、Available working time

6V / 4Ah built-in maintain-free battery, this meter can work 48 hours continually if battery is fully charged.

B. Data format of communication

§1、communication address xx = 0; Continually send mode

Data format is: = X1 X2 X3 X4 X5 X6 X7 SA CR

X1 X2 X3 X4 X5 X6 X7 is the displaying value. X1 is the least significant bit and X7 is the most significant bit.

SA = 0100ABCD

A = 1: Weighing is overflow

B = 1: Tare

C = 1: Weighing is stable

D = 1: Zero point

§2、communication address xx = 1 - 98; Answering mode

§2.1、Read weight value: STX R D S n BCC CR

n is communication address (81H – E2H) , BCC is check byte

Return data: STX n D X1 X2 X3 X4 X5 X6 X7 SA BCC CR

§2.2、Tare and tare clearance: STX T A R n BCC CR

n is communication address (81H – E2H) , BCC is check byte

Return data: STX n D X1 X2 X3 X4 X5 X6 X7 SA BCC CR

Note: BCC is check byte, it is binary sum (just take the lowest byte) of all the data from STX to BCC (not include STX and BCC).

If BCC is 02H or 0DH, then BCC should be changed to 03H or 0EH.

§3、communication address xx = 99; Print mode

§3.1、When accumulating, serial communication send data by the following format:

N3 N2 N1 : C6 C5 C4 C3 C2 C1 CR LF (in count mode)

N3 N2 N1 : W7 W6 W5 W4 W3 W2 W1 k g (lb) CR LF

N3 N2 N1 is the times of accumulation , C6 C5 C4 C3 C2 C1 is the value of accumulation.

W7 W6 W5 W4 W3 W2 W1 is the weight , weight unit is kg or lb.

§3.2、When print the value of accumulation, serial communication send data by the following format:

***** CR LF

n = N4 N3 N2 N1 CR LF

$total = W8 \ W7 \ W6 \ W5 \ W4 \ W3 \ W2 \ W1 \ k \ g \ (lb)$
 $count = C6 \ C5 \ C4 \ C3 \ C2 \ C1$ (When there is count accumulation)
 CR LF LF LF LF LF LF

C. Connection

§1、 Loadcell connection (D-SUB-9 hole)

Bridge voltage: 5VDC, Sensor sensitivity: 1.0 - 2.0 mV/V

Pin 1-2: +E (sensor positive inspire)
 Pin 4-5: -E (sensor negative inspire)
 Pin 7: +S (sensor positive output)
 Pin 8: -S (sensor negative output)
 Pin 3: GND (sensor shield ground)

On board connector CN1 :

Pin 1: +E (sensor positive inspire)
 Pin 2: +S (sensor positive output)
 Pin 3: -S (sensor negative output)
 Pin 4: -E (sensor negative inspire)
 Pin 5: GND (sensor shield ground)

§2、 Communication connection (D-SUB-9 pin) (Note: RS485 is optional)

Pin 2: RXD (RS-232 input)
 Pin 3: TXD (RS-232 continue output)
 Pin 5: GND

On board connector CN3 :

Pin 1: NC (not connect)
 Pin 2: NC (not connect)
 Pin 3: NC (not connect)
 Pin 4: GND

Pin 5: RXD (RS-232 input)

Pin 6: TXD (RS-232 continue output)

Calibration and weighing parameters setting

Only in setting permit state (push the setting permit socket to the "EN" side, the version number display is: [-]), the following operation is available.

§1、Enter setting

Press [*] key , display: [**CAL SP**] , then press [→] key to enter calibration , otherwise

Press [*] key , display: [**-Set-**] , then press [→] key to enter weighing parameters setting , otherwise Press [*] key , display: [**-A-d-**] , then press [→] key to A/D display , otherwise press [*] key, to enter normal weighing display.

§2、Weighing parameters setting

First enter weighing parameters setting.

Step	Operation	Display	Explain
1		[d 0.1]	division unit of display
2	Press [↑] key		Select one item from 0.001 to 50
3	Press [*] key	[300.0]	maximum weighing value
4	Press [→] [↑] key		Input new maximum weighing value
5	Press [*] key	[g X]	Zero track range
6	Press [↑] key		Input new value (zero track range = $0.3d * X$)
7	Press [*] key	[3.0]	Minimum weighing value
8	Press [→] [↑] key		Input new minimum weighing value
9	Press [*] key	[F e d c b a]	See note 2
10	Press [→] [↑] key		Set parameter
11	Press [*] key	[FLt X]	Filter parameter
12	Press [↑] key	See note 1	Input new value. X=0 ; static weighing mode X=1 ; cran scale weighing mode X=2 ; dynamic weighing mode

13	Press [*] key	[[Adr XX]]	XX: communication address
14	Press [→] [↑] key		XX = 0: the meter will continually send weighing value XX = 99: the meter can be connected to the printer with serial interface XX = 1-98: answering communication mode
15	Press [*] key	[[b 9600]]	Communication baud rate
16	Press [↑] key		Select one item among 1200 , 2400 , 4800 , 9600
17	Press [*] key	[[-A-d-]]	
18	Press [→] key		Enter A/D value display
19	Press [*] key		Return normal weighing display

Note 1: In dynamic weighing mode, when weight is stable and bigger than minimum weighing value, the displaying value is locked. When weight is less than minimum weighing value, the displaying value is unlocked.

Note 2:

- e = 0: No auto power off function
- e = 1: With auto power off function (If the weighing value did not change in 15 minutes, the meter will be turned power off)
- d = 0: No unit switch
- d = 1: With unit switch
- c = 0: Not use
- b = 0: No accumulation function
- b = 1: With accumulation function
- a = 0: No high resolution display function
- a = 1: With high resolution display function

§3、Calibration

Step	Operation	Display	Explain
1	Enter calibration	[[CAL 00]]	Enter zero point calibration state, confirm no load and weighing is stable.
2	Press [*] key	[[-----]]	Zero point calibration is carrying on
3		[[300.0]]	maximum weighing value
4	Press [→] [↑] key		Input actual load value, and then wait until weighing is stable.
5	Press [*] key	[[-----]]	Range calibration is carrying on. After range calibration is finished, the meter will return to normal weighing display.

Note 1 :If zero point is correct and just need range calibration ,then after display: **[[CAL 00]]** , press **【→0←】** key to skip zero point calibration and enter range calibration directly.

Note 2 : If only zero point need calibration, then when display maximum weighing value: **[[300.0]]** , use **【→】** **【↑】** key to input zero, then press **【 * 】** key (or directly press **【 * 】** key) to end range calibration and return normal weighing display.

§5、 After calibration, please turn the power off

Push the setting permit socket to the "OFF" side, and then turn on the power to use.

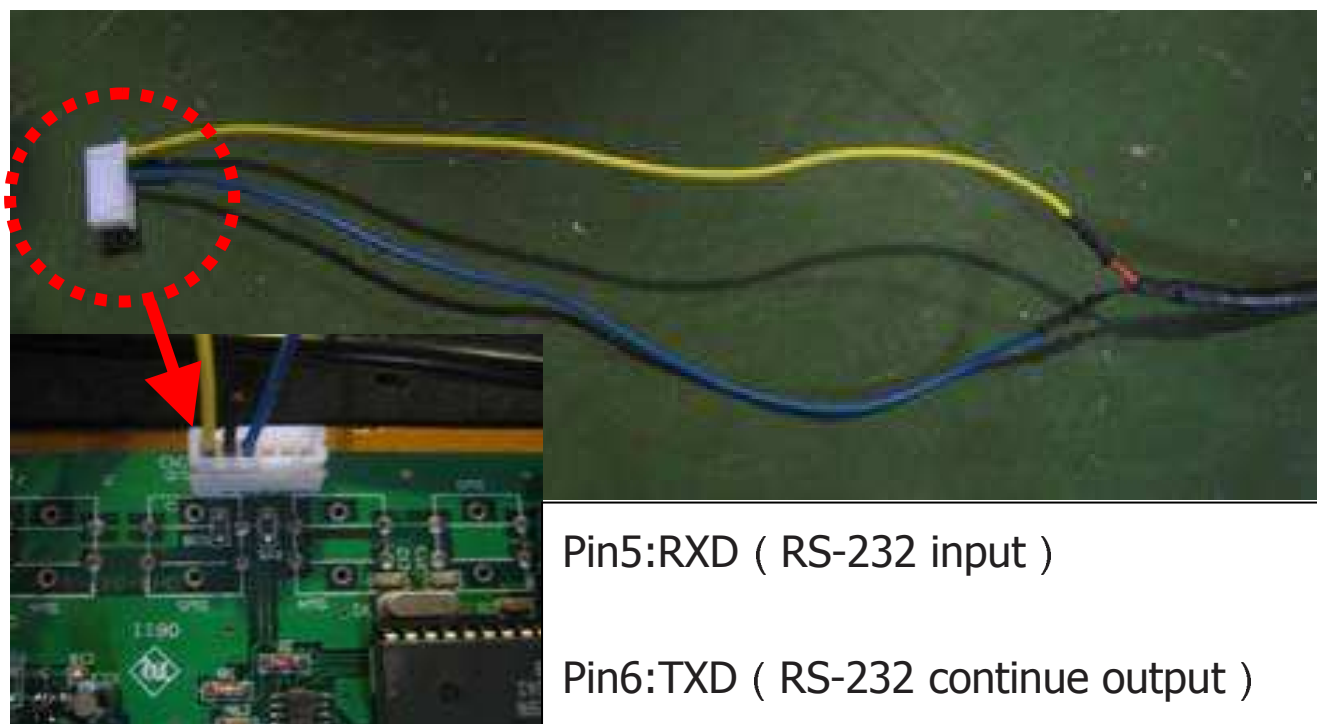
§6、 A/D value display

A/D value display can be used to check whether the meter or the sensor is working correctly. Normally A/D value is around 38000 when no load (or unplug the sensor plug)

§7、 Error display and failure diagnoses

- 1 . **[[Err E]]** : The memory of the meter is failure.
2. **[[Err 1]]** : A/D value is less than normal range, the meter or the sensor may be failure.
Unplug the sensor, if error display disappears, then the sensor is failure.
Unplug the sensor, if error display is still there, then the meter is failure.
3. **[[Err 2]]** : A/D value is bigger than normal range, the meter or the sensor may be failure.
Unplug the sensor, if error display disappears, then the sensor is failure.
Unplug the sensor, if error display is still there, then the meter is failure.
4. **[[Err 3]]** : Zero point is abnormal when power on.
5. **[[Err 4]]** : A/D value is too small when calibrate zero point.
6. **[[Err 5]]** : Range calibration is failure.
7. **[[Err 6]]** : Weighing value can not be stable in calibration period.
8. **[[OUEr]]** : Weighing value is bigger then the maximum weighing value.
Unplug the sensor, if error display disappears, then the sensor is failure.
Unplug the sensor, if error display is still there, then the meter is failure.
Enter A/D value display, then check whether the meter is working correctly.
If A/D is working correctly, then maybe the maximum weighing value is not setting correctly, try to set again.
Or re-calibrate the meter to resume normal working state.
- 9 . Weighing value can not be stable, maybe the meter or the sensor is failure.
Unplug the sensor, if weighing value is stable, then the sensor is failure.
Unplug the sensor, if weighing value can not be stable, then the meter is failure.
10. Can not turn on the power, maybe the inner battery is exhausted or the sensor is short circuit or the meter is failure.
Unplug the sensor, if can turn on the power, then the sensor is short circuit.
Use outside power supplier, if AC indicator is off, then the meter is failure.
Use outside power supplier, if AC indicator is on, but still can not turn the power on, then the meter is failure.

<PRINT CONNECTION>



< MEMORY Accumulation >

Two times Press 【 * 】 key, display auto accumulation state:

Aut 0 : manual memory accumulation.

Aut 1 : auto memory accumulation

Aut 2 : auto save displaying value when load is stable.

When unload to less than minimum weighing value,
the last stable value will be accumulated automatically.

Use 【▲】 key to select, press 【*】 key to enter normal weighing display.

Note: In auto accumulation state, the indicator 【**AUT**】 is on.