Weighing Indicator

SK210

User Guide

Warnings and Cautions

- READ this guide BEFORE operating or servicing this equipment and FOLLOW these instructions carefully.

	⚠ **WARNING**
	FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD CONNECT THE AC VERSION OF THE WEIGHING INDICATOR TO PROPERLY GROUNDED OUTLET ONLY. DO NOT REMOVE THE GROUND PRONG.

	⚠ **WARNING**
	ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THE TERMINAL. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

	⚠ **CAUTIONS**
	BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT ALWAYS REMOVE POWER AND WAIT AT LEAST THIRTY (30) SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO OR DESTRUCTION OF THE EQUIPMENT AND/OR BODILY HARM.

NOTICE
TO AVOID DAMAGE TO THE PCB OR LOAD CELL, REMOVE POWER FROM THE IND231/IND236 TERMINAL AND WAIT AT LEAST 30 SECONDS BEFORE CONNECTING OR DISCONNECTING ANY HARNESS.

	NOTICE
	OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Contents

1. Introduction

1.1 SK210 Overview

Standard Features:

- Easy to handle plastic enclosure design for the TM101.
- Support one analog load cell platform with up to four 350Ωload cells.
- Powered by either **85–264/50Hz~60Hz V AC** and DC 12~24V or internal 6V4AH battery pack .
- One standard serial port (COM1) as RS232
- Front panel key access to basic weighing functions – Zero,Tare, Clear, configurable function and print
- Animal weighing: Peak-hold. Data-hold, Auto-hold
- Accumulation
- Low battery remind,
- Power off automatically

1.2 Technical parameter

- Stimulating voltage: +5 VDC
- A/D converting speed: 80 or 10 SPS（Default: 10SPS）
- Load signal range: -10-30mVDC
- load capacity: it can connect 4 pcs 350Ω load cell at most
- weight unit: kg/lb

- Resolution: 6000e
- Interval: 1/2/5/10/20/50
- Display: 6-digits LED/LCD; Word height: 20.3mm
- Front panel key: ON/OFF TOTAL HOLD TARE ZERO SET
- Interface: RS232C (baud rate optional 1200/2400/4800/9600)
- Working temperature: -10～40℃
- Storage temperature: -20～+60℃
- Power：6V/4Ah rechargeable battery 110/220VAC

1.3 Physical Dimensions
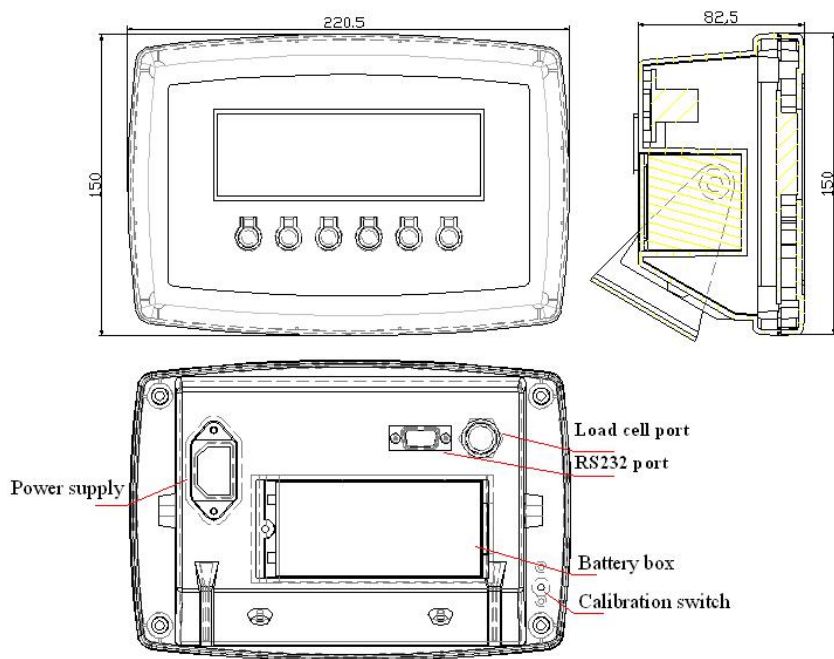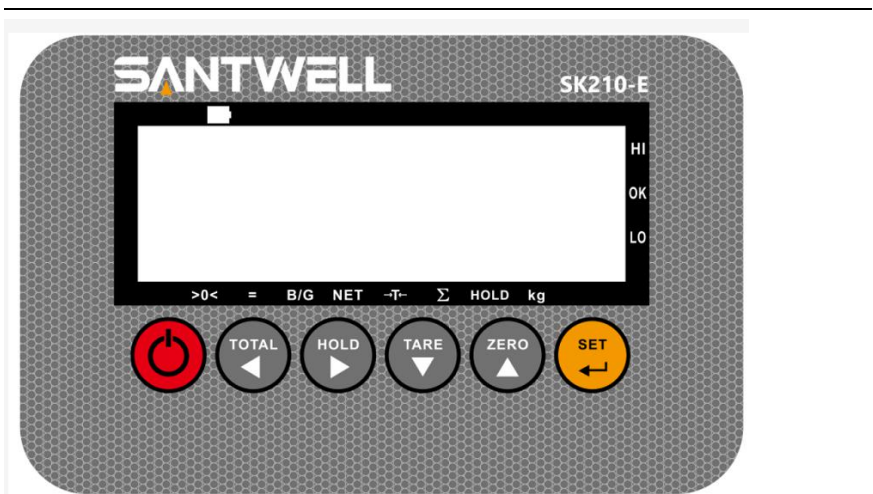
1.4 Display and Keyboard

Weighing indicator display instruction

LED display	instruction
⯊	Weighing data display
KG	Weight unit kg
HOLD	Hold the data
Tare	Display tare status
Net	Display net weight

Gross	Display gross weight
◿ ◹	Display data keep still
⇨○⇦	zero, indicating zero weight
Battery	Using battery
Hi	Over Limit
OK	Within Limit
Lo	Below Limit
Total	Accumulation
Count	Counting function

Key's function

▼　DOWN

▲　UP

◀┘ CONFIRM, GO TO NEXT STEP

◀　LEFT

▶　RIGHT

⏻　ON/OFF, EXIT AND SAVE SETTING

Key symbol	Key name	Key function
SET	SET	Work together with "on/off" enter and exit calibration
ZERO	ZERO	Clear weight within zero range
TARE	TARE	1.At Gross mode, tare the loaded weight 2.At Net mode, display gross weight after deduct tare
HOLD	HOLD	Enter and exit "hold" mold
TOTAL	TOTAL	Accumulating operation
ON/OFF	ON/OFF	Press it for 2 seconds to power on or power off

2. Installation and Basic Function

2.1 Connect indicator with load cell

SK210 can connect 4 x 350Ω load cell at most, workable for 4 or 6 wire load cells. 5 pin socket for quick connection.

Quick connector connection
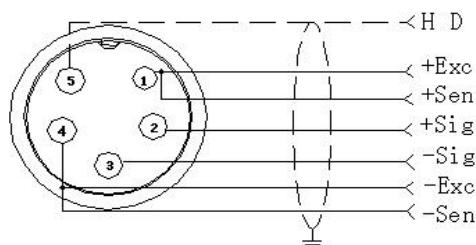
2.2　Communication interface
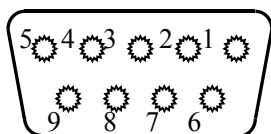
PIN2-------TXD

PIN3------RXD

　PIN5 --------GND

2.3 Power on

Power on and indicator perform self-checking and go to weighing mode.

2.4 Zero setting

Within zero range, press "zero", indicator weighing is cleared. When Indicator is not stable, zero is unworkable.

2.5 TARE

At the gross weight mode, if the weight is stable, pls. press "Tare" key , the indicator will take the loaded weight as tare, and show net weight,
At this time the gross mode will change to net mode. The " net" and "tare" light is on, and the net weight is zero

2.6 HOLD(Animal weighing)

C11=0 "hold" function unworkable

C11=1 PEAK HOLD
Press" HOLD" key, the Hold light is on, and show the Maximum data on the weighing indicator. Press " HOLD" key again to exit the hold function

C11=2 Data-hold

Press" HOLD" key, the Hold light is on, and show the data on the weighing indicator. Press " HOLD" key again to exit the hold function

C11=3 Auto-hold

If the weight on the scales above 20d and keep stable, the indicator will show the data for 6 seconds and the " hold" light Is on , after 6 seconds the indicator back to general weighing, and the " hold" light is off

C11=4 Special Animal weighing function

Press" Hold" key, the indicator will show" LOC" for 3 seconds, the " hold" light is on, During the 3 seconds, the indicator will catch the average weight and show it.

Press" HOLD" key again to exit it

2.7 TOTAL

Accumulation operation

At Zero mode, load weight till stable, Press "TOTAL" key go to accumulating

Mode," total" light on, display" n001", and then display loaded weight; unload weight , back to zero, load weight again till stable. Press "TOTAL", display"n002"

Then show the loaded weight. Repeat it maximum 999 times.

Check the total weight operation:

Press "SET" hold it then press "TOTAL" At the same time, display "n**", (accumulating times) then display total weight.

There are 8 data totally. It shows the first 4 digital. then the last 4 digital
For example, the first 4 digital is"0012", the last 4 digital is"34,56"
It means the actual weight is "1234.56"

At TOTAL (accumulate) mode, Press "TOTAL" key the indicator show" clrn", it means don't clear the total Weight, Press " ⬅ " key confirm it and exit ; if clear total weight, Press " ⬆ " " ⬇ "

"clrn" change to "clry" it means clear total weight display. Press " ⬅ "to clear the the total weight and exit accumulating mode.

2.8 Expand x 10

Press " SET" and "TARE" key at the same time, 10 times high resolution shows and then back to normal after 3 seconds.

2.9 Up and Low limit alarm

Pls. set C13= Up limit, C14=Low Limit, when the weight is over up limit, the "HI" light will on, and indicator will make a sound to alarm.; when the weight is below than the low limit, the "LO" light will on.. when the weight

is within the limit, the "OK" light is ok.

2.10 Print function

When the data is stable, connection with printer, it will be printed after press" ← "1 second.

Note：print the gross weight when at tare mode , if the net weight is zero. Can not print.

2.10.1　Print output format

NO.　　　　　　　004 （NO.）
G.W:　　　　　　8.88kg　(gross，example for two decimal point)
T.W:　　　　　　2.88kg （tare）
N.W:　　　　　　6.00kg （net）

2.10.2　Print the accumulated output format

NO.　　　　004 （NO.）
Total:　　　003　(accumulate times，example for 3 times is 003)
Total.W:　　2.88kg （accumulate weight）

3. Maintenance

3.1 Regular Error and maintain method

Error	Reason instruction	Solution
Display UUUUUU	1. the loaded weight excess overload range of max. capacity 2. wrong connection with load cell or no connection with it. 3. load cell unworkable	1.decrease loaded weight 2. check load cell connection 3. checking load cell：check input and output resistance to judge it is good or not.
Display nnnnnn	1. calibration is no good 2. cell signal line connect a wrong line. 3. the cell is damage	1. check scale is resisted or not, foot keep level or not. 2. check load cell connection. 3. checking load cell：check input and output resistance to judge it is good or not.
ERR1	during calibration, not input added weight or input weight exceed max capacity.	Input the correct weight

ERR2	during calibration, the added weights not enough	Added weight at least 10% of Max. cap. Recommend the weights is 60-80% the Max. capacity
ERR3	during calibration, input single is negative.	1.Check connection is correct or not. 2. Check load cell is damaged or not. 3.Recalibration, if still wrong. pls replace the PCB
ERR4	During calibration, signal is unstable	Ensure added weight and scale is stable, start calibration
ERR5	EEPROM check error	Change PCB.
ERR6	Exceed zero range	Remove the weight

3.2 Daily maintenance

1. In order to ensure indicator display clearly and prolong use life, the indicator should not be placed directly on sunlight.

2. Load cell and indicator should be well connected , the system should have a good ground, away from strong electric field, magnetic field.

3. Do not use indicator outside in rainy, better keep it power off.

4. Power off firstly while plug and unplug

3.3 Restore default parameters

Enter setting menu, set F07= 1,press ← then press ⏻ exit saving setting, all parameters will be back to default setting.

Note：Pls. do not restore default parameter easily if you are not professional and have not scale calibration.

Default parameter form

parameter	instruction	Default value
F01	Calibration unit	1
F02	decimal digits	0
F03	Division value	1
F04	Max capacity	10000
F05	Empty scales calibration	0
F06	Capacity calibration	0
F07	restore the default parameters	0
F08	Warning tone	1
F09	Automatic power off	0
F10	Power saving mode	0
F11	Hold function	0
F12	Animal weighing mode	0
F13	Upper limit warning	000000

F14	Lower limit warning	000000
F15	Inner code display	
F16	Date	
F17	Time	
F18	Serial interface data output methord	0
F19	Serial interface Baud rate	3=9600
F20	Manual zero setting	2
F21	Initical zero setting	10
F22	Automatic zero tracking range	0.5
F23	Automatic zero tracking time	1
F24	Verload range	9
F25	Negative display range	10
F26	Standstill time	1
F27	Standstill range	2
F28	Dynamic filter	0
F29	Noisy filter	2
F30~F40	Reseverd menu	