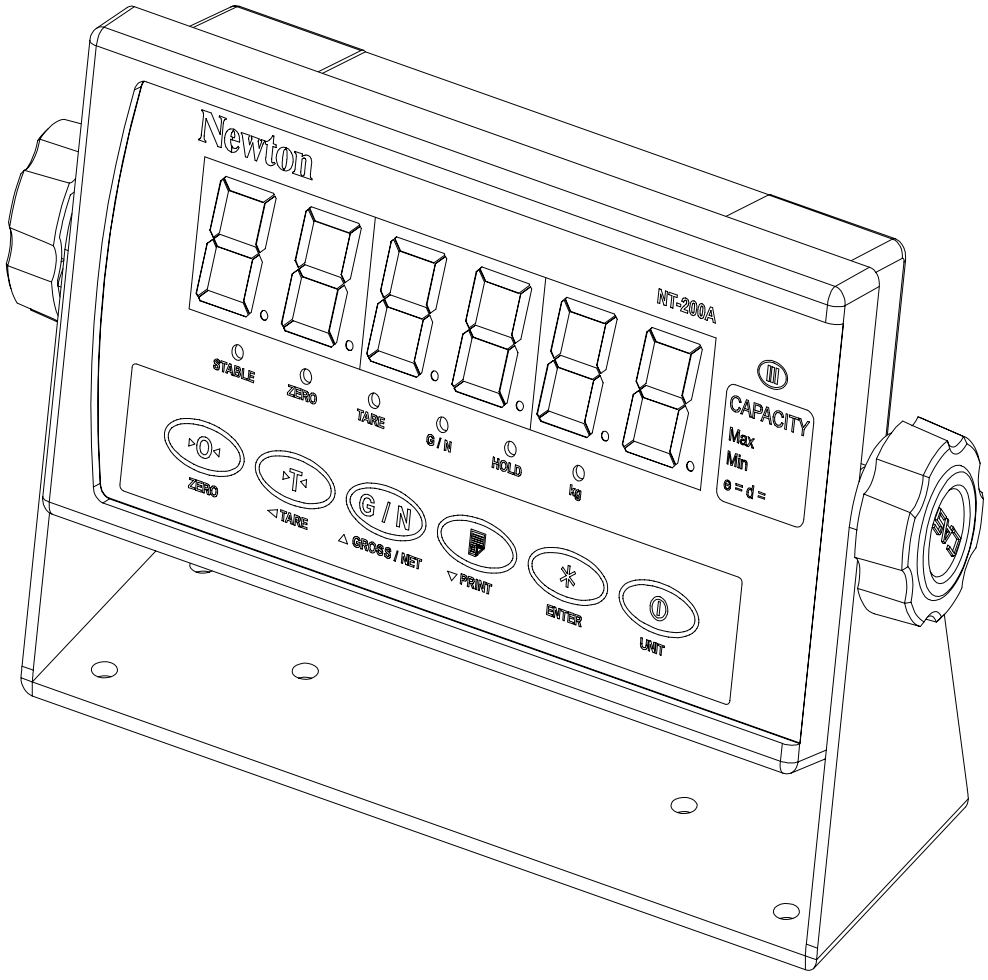
INDUSTRIAL INDICATOR

NT-200 **Series**

OPERATING MANUAL



CAS

Table of Contents

0. Precaution

Observe the following safety precautions:

- Do not disassemble the indicator.
- Indicator must be grounded to minimize electricity static. This will minimize defect or electric shock.
- Do not pull the plug by its cord when unplugging. Damaged cord could cause electric shock or fire.
- Do not place or use the indicator near flammable or corrosive gas.
- To reduce electric shock or incorrect reading, do not spill water on the scale or place it in humid condition.
- Avoid placing the indicator near heater or direct sunlight.
- Insert plug firmly to wall outlet to prevent electric shock.
- For consistent and accurate reading, maintain periodical check by your CAS authorized dealer.
- Avoid sudden shock to the indicator. Internal mechanism could be damaged.
- Place the indicator on firm and temperature consistent environment.
- Keep the indicator away from other electromagnetic generating devices. This may interfere with accurate reading.

Our Dealers: CAS feels that each of its valued customers should get the best service available. Whether it's the initial installation of our product, maintenance/repair work, or simply answering questions about our products, CAS Corporation and all of its Authorized Dealers are highly trained to assist you with any need regarding CAS products.

1. Introduction

Congratulations on you're purchasing the NT-200 Series weighing indicator.
These goods are the product of years of research, during the manufacturing process of this indicator to endure that it is a reliable instrument that perform accurately.
Each indicator is subjected to several levels of quality control before it leaves the factory.

CAS indicator is shaped firmly and delicately designed to coincide with the special requirements of several industrial fields and includes many functions and various external interfaces. Also, it is programmed on the basic of the user's convenience and contains help display functions to be used easily.
Before using NT-200 Series, It is recommended to read this manual carefully and to apply the function application fully.

2. Features & Main Function

Features
☐ Appropriate for Weight and Measurement System
☐ Easy Operation
☐ Full Digital Calibration
☐ Weight Back-Up [Weight Memory at Sudden Power Failure]
☐ 4 Multi-Point Calibration
☐ Command Mode Function (Control by PC – Request and Set the Data)
☐ 6 Wires / 4 Wires Load Cell (Select the Dip Switch inside)
☐ Dual Range
☐ Kg/lb Conversion & kg/lb Calibration
☐ Lock Function of Front Key
☐ User Message Print Function
☐ Output the signal of Hi & Low limit, Zero, OK with serial comm. 201
☐ Count, Limit, Accumulation and Percent Function 201
☐ Set Point (20 of (tare 200), (Hi-limit, Low-limit, Count unit each 201)
☐ Preset Tare
☐ Gravity Compensation

Main Function
☐ Various Printer Connection [Roll DEP & Label DLP Printer Support]
☐ Users can Set the Desirous Max. weight and a Division Freely
☐ Independent Zero Calibration
☐ Self Hard Ware Test

200 - Only LED Version [NT-200A / NT-200S]

201 - Only LCD Version [NT-201A / NT-201S]

Nothing – Common Function

3. Specification

Load Cell & A/D Conversion	
Load Cell Excitation Voltage	DC 5V (Connectable up to 6 EA)
Zero Adjustment Range	0.05 mV ~ 5 mV
Input Sensitivity	2 Uv / D (OIML, KS)
	0.5 uV / D (OIML, KS)
Non-linearity	0.01% Full Scale
A/D Internal Resolution	1 / 200,000
A/D External Resolution	1 / 5,000 (NTEP, OIML, KS)
	1 / 10,000 (Non NTEP, OIML, KS)
A/D internal resolution	10 ~ 90 times/sec (Changeable)
Calibration	Full Digital Calibration : SPAC™ **(Single pass automatic span calibration)**

*** It is possible to set communication speed and a use of RS 232, RS422.**

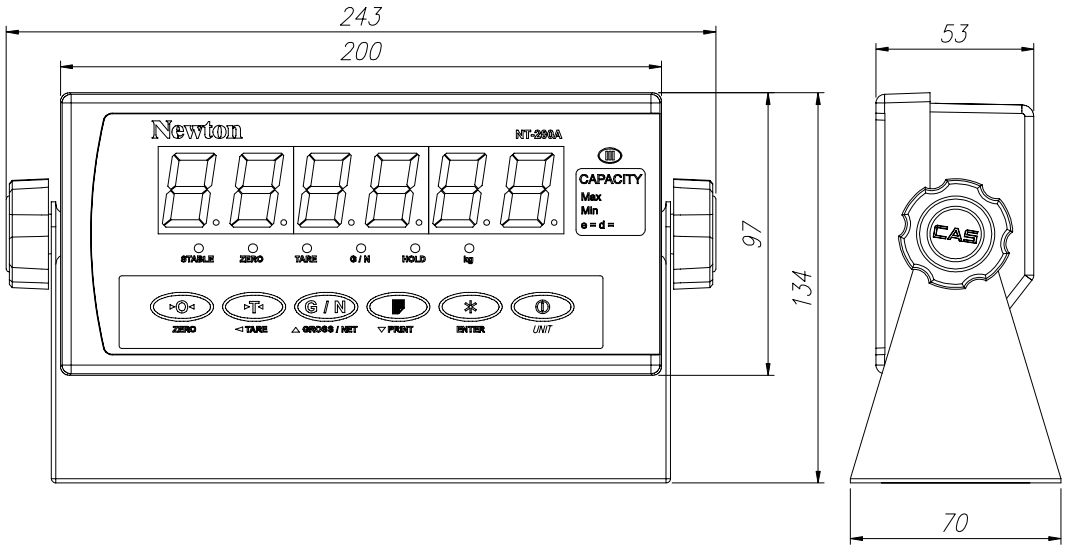
Digital Part		
Display	NT-200A, NT-200S	LED (6 digit)
	NT-201A, NT-201S	LCD (6 digit + Sign)
Character Size	NT-200A, NT-200S	25 mm (Height)
	NT-201A, NT-201S	24 mm (height)
Display below zero	"-" minus sign	
Lamp	ZERO, TARE, GROSS, NET, STABLE, HOLD, UNIT(kg, lb)	
AC Adapter	AC 230 V (DC 9V, 600mA)	
Operating Temperature	-10℃ ~ 40℃	
Product Size	96mm(H) x 200mm(L) x 52mm(W)	
Product Weight	Approx. 0.5Kg	

Communication Part	
Standard	COM1 (RS-232 Printer & PC Interface)
Option	RTC (Real Time Clock)
	COM2 (RS-422 Multi Drop Interface)

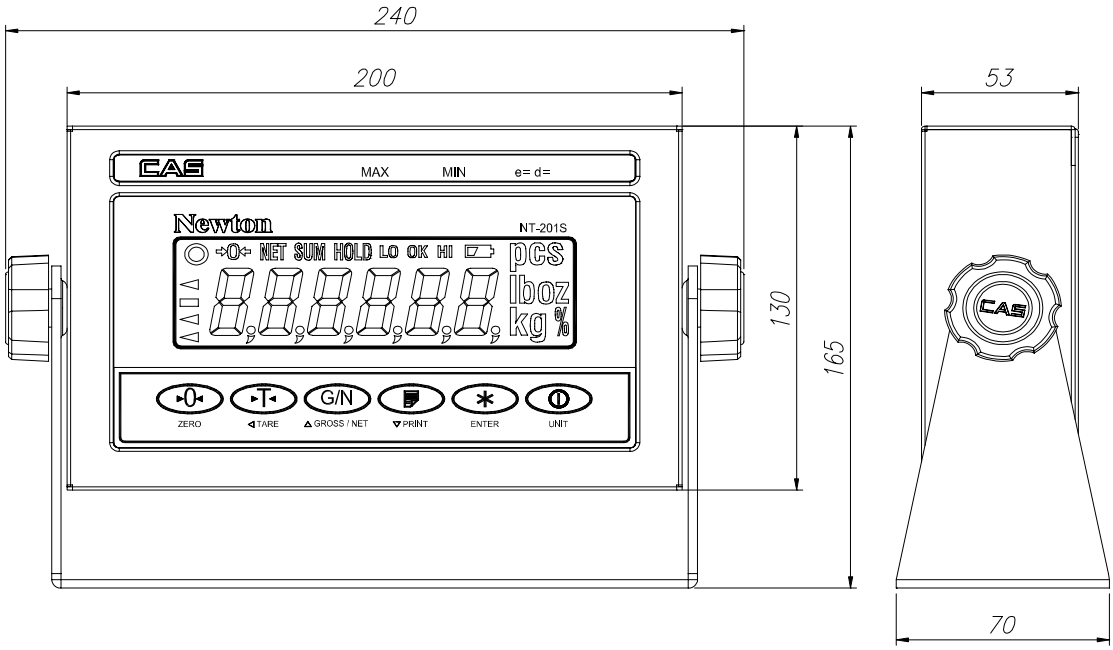
*** You can use COM2 for connecting printer (RS-232)**

4. Dimension

NT-200A, NT-201A

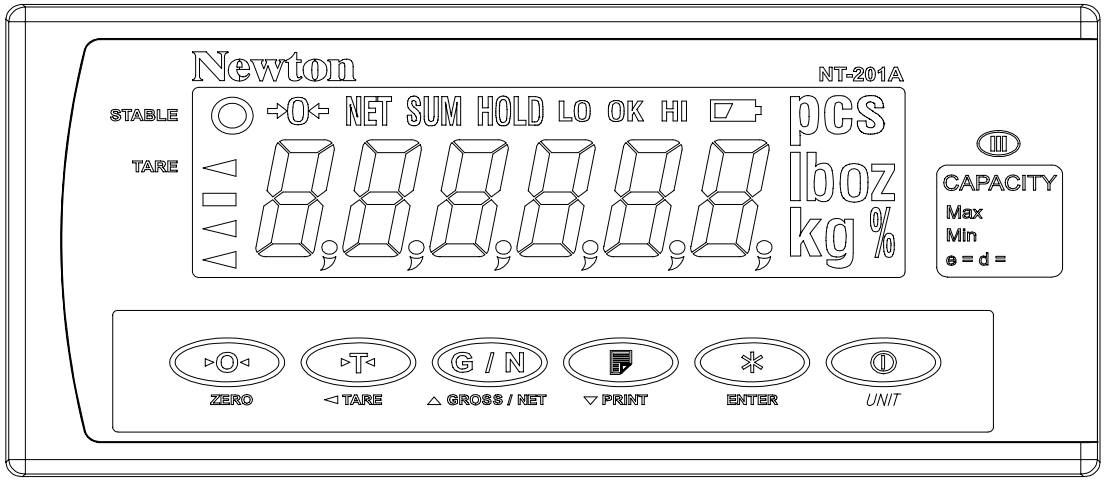


NT-200S, NT-201S



5. Front Panel

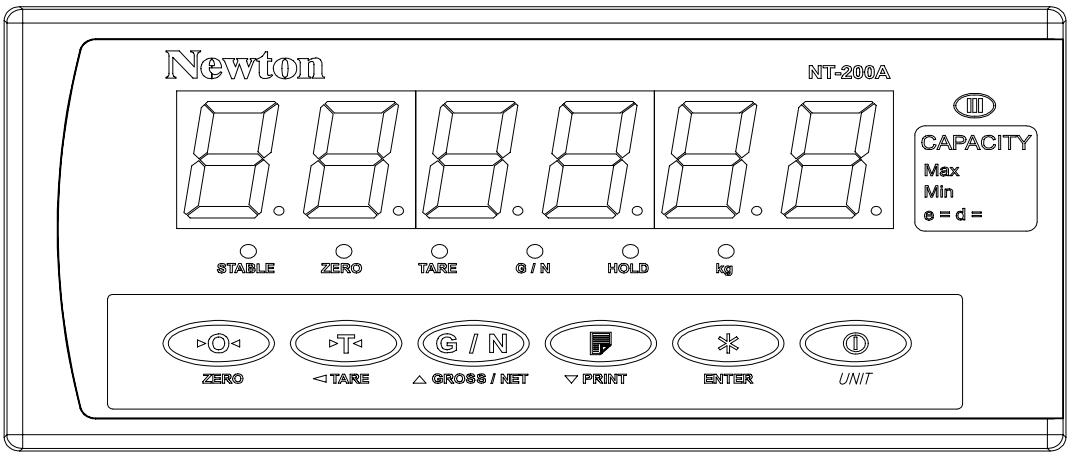
NT-201A



▯ Display Lamp

⓪	**STABLE**	Measured Weight is stable
NET	**GROSS/NET**	Toggles the display between gross & net weight
→0←	**ZERO**	Current Weight is 0 kg
HOLD	**HOLD**	Hold function is activated
◁	**TARE**	Tare is activated
SUM	**ACCUMULATION**	This state is in accumulation mode
PCS	**COUNT MODE**	It is in count mode & displayed the unit of count
%	**PERCENT MODE**	It is in percent mode & displayed the unit of percent

NT-200A



Display Lamp

STABLE	Measured Weight is stable
ZERO	Current Weight is 0 kg
TARE	Used to weigh an item by using the container
G / N	Toggles the display between gross & net weight
HOLD	Hold Function is activated

Key Board

Used to enter setting value in TEST, CAL, and SET mode instead of Numeric keys	
▲	Increase setting value of first digit by one
▼	decrease setting value of first digit by one
◄	Moves one digit to left
ZERO	Reset the Current Value

▷0◁	**ZERO KEY**
	Used to remove small variations in the indicator's zero
	If pressed for 2 sec, you can go to SYSTEM Mode 201

▷T◁	**TARE KEY**
	Used to weigh an item by using the container
	Current weight is memorized as tare weight
	If pressed in unload condition, tare setting is released
	If pressed for 2 sec, you can go to KeyTare Mode
	When you know the tare weight, you can enter the tare weight

G/N	**GROSS / NET KEY**
	Toggles the display between gross weight and net weight
	It means G/N lamp is on for Gross & off for net weight
	If pressed for 2 sec, you can see "CodE", you can input Product ID 200
	If pressed for 2 sec, you can "CodE=Z lim=t". Then you can input Product ID with ZERO, Limit value with TARE key 201

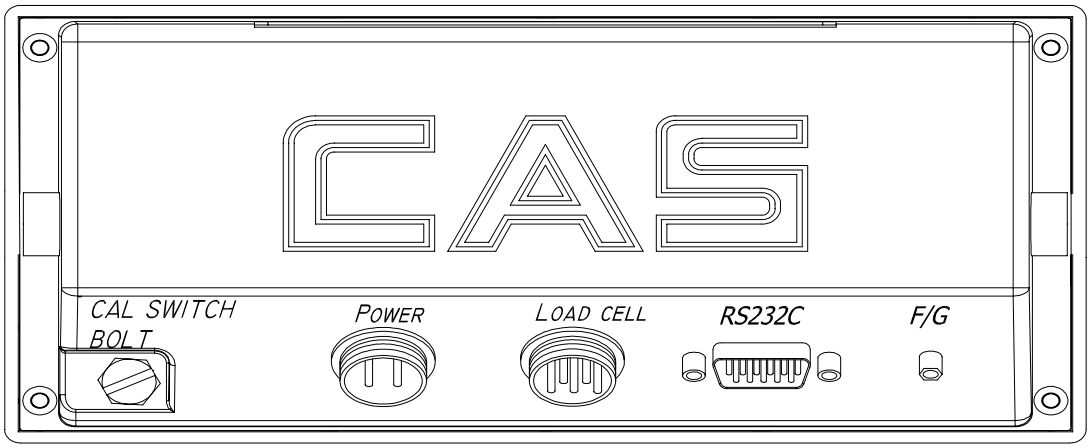
	**PRINT KEY**
	If you print, current weight is added to total weight
	If pressed for 2 sec, you can see "SUB = Z GrAn = T". You can print out the sub total weight with ZERO key and total sum weight with TARE key
	After the sub total weight is printed out, it is set to zero(0)

	**ENTER KEY** - Used as HOLD key
	If pressed for 2 sec, you can see "dEvi = Z Set = t". You can go to DEVIDE with ZERO, SET Mode with TARE key

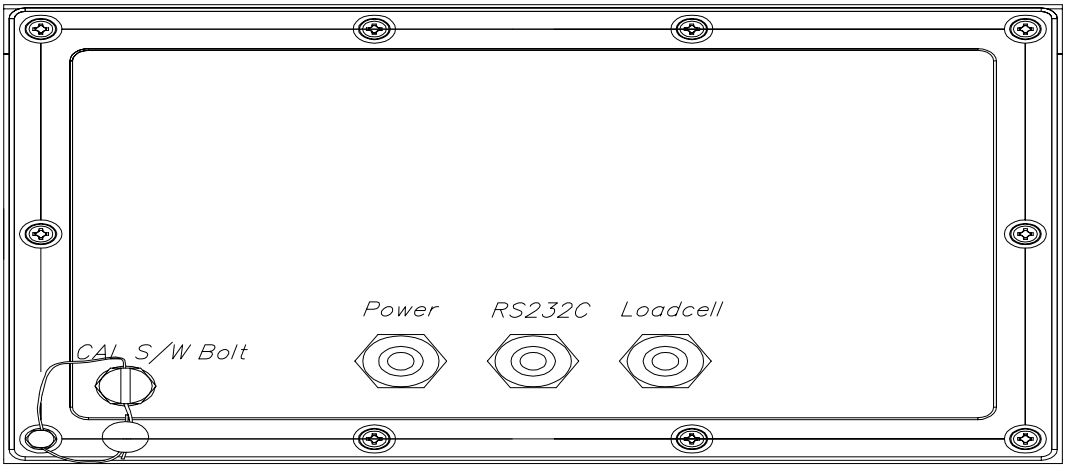
	**UNIT KEY**
	You can change the unit of weight (kg/lb) (USA Version) All functions are used with the unit of weight is selected in weight calibration in CAL MODE.
	If you press UNIT key for 2 sec, power is turned off

6. Rear Panel

NT-200A, NT-201A



NT-200S, NT-201S

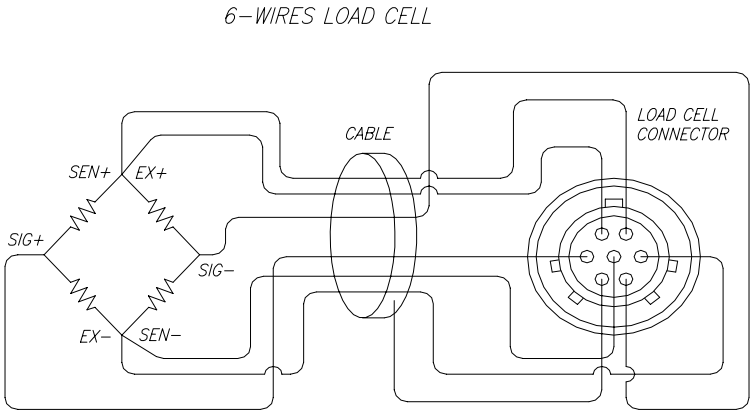


.CAL S/W	Calibration Switch Bolt
.POWER	Port for Power
.LOAD CELL	Port for connecting Load Cell
.RS-232C	Serial Interface COM1, COM2 Port [connect to PC, Printer]
.F/G	Ground Terminal [Frame Ground] If it is not connected, it may cause trouble

7. Installation

Load Cell Connection

Connect load cell connector to load cell port which is in the backside of indicator.



Note: Wire color can be different depending on the manufacturer or Load cell's model

PIN	COLOR	PIN	COLOR
1 (EXC+)	RED	5 (SIG+)	GREEN
2 (SEN+)	BROWN	6 (SIG-)	BLUE
3 (EXC-)	WHITE	7 (SHIELD)	SHIELD
4 (SEN-)	BLACK		

8. Test Mode

How to Go to Test Mode

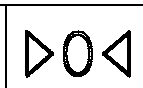
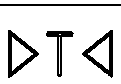
To go to Test mode, press the [TARE]+[UNIT] key in starting mode until being displayed the message of " **tESt** " .
In Test mode, Back-light is On.

Test Menu(TEST1 – TEST6)

Test 1 : Key test
Test 2 : A/D conversion test
Test 3 : Serial interface(Com1) test (RS-232)
Test 4 : Serial interface(Com2) test (RS-422/485)
Test 5 : Printer test

TEST 1

KEY TEST			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
UNIT	**Go to TEST2**	**tESt 1**	**TEST 1 Condition**
OTHERS	**Testing Key Codes**	**1**	**Press any key to test then the Code of that key is shown below**

KEY			G/N			
	ZERO	TARE	GROSS/NET	PRINT	*	UNIT
CODE	**0**	**1**	**2**	**4**	**8**	**Go to TEST2**

TEST 2

A/D Conversion TEST (Load Cell Test)			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
UNIT	**Go to TEST3**	**tESt 2**	**TEST 2 Condition**
		24750	**TEST 2 is performed automatically**
			This value can be changed

Note 1. Check the numeric by loading and unloading a weight.
If the numeric is not changed or it is o, check the connection of the load cell.

TEST 3

RS - 232 TEST with Computer (RS - 232C)			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
ZERO	**Transmit '0**	**tESt 3**	**TEST 3 Condition**
TARE	**Transmit '1**		
NET/GRS	**Transmit '2**		
PRINT	**Transmit '4**	**-----**	**Waiting for Transmission & reception**
ENTER	**Transmit '8'**	**0 ----- 1**	**Receive : 1 Transmit : 0**
UNIT	**Go to TEST4**	**2 ----- 1**	**Receive : 1 Transmit : 2**

Note 1. Before testing, connect RS-232C of PC to COM1 port of Indicator.

Note 2. If you send ASCII code 0 ~ 9 in PC keyboard, Indicator receives this data.
If you press "1(ZERO key) " of indicator, you can check it in PC.

***** INDICATOR TEST (If PC is not connected)

1. Connect No.2(TxD) and No.3(RxD) of Indicator Serial Port.
2. Press any key of the indicator and check the received data whether it is same or not.

TEST 4

RS - 422/485 TEST with Computer (RS - 422/485)			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
ZERO	**Transmit '0'**	**tESt 4**	**TEST 4 Condition**
TARE	**Transmit '1'**		
NET/GRS	**Transmit '2'**		
PRINT	**Transmit '4'**	**-----**	**Waiting for Transmission & reception**
ENTER	**Transmit '8'**	**0 ----- 1**	**Receive : 1 Transmit : 0**
UNIT	**Go to TEST5**	**2 ----- 1**	**Receive : 1 Transmit : 2**

Note 1. Before testing, connect RS-422/485 of PC to COM2 port of Indicator and run the communication program of PC.

Note 2. Before testing, connect COM2 port of Indicator.

Note 3. If you send ASCII code 0 ~ 9, Indicator receives this data.
If you press "1(ZERO key) " of indicator, you can check it in connected device.

TEST 5

PRINTER TEST			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
UNIT	**Go to Normal Mode**	**tESt 5**	**TEST 5 Condition**
ENTER	**Testing the Printer**		

Note 1. You should set the use of printer and printer in Device mode.

Note 2. If printer connection and setting is done successfully,
the display shows "good" and if not, the displays shows error message.

Note 3. Test Output Form of Printer is as follows.
And see " TEST OK " in the Hyper Terminal also.

TEST OK

9. System Mode (201 Only)

How to Go to System Mode

If you press the [ZERO] key for 3 seconds in weighing mode.
you can see the "SyS" on the display after showing "on". And then
you can move to any mode where you want to go using the G/N key.

SYSTEM MODE					
MODE	[G/N] key		DISPLAY	[ENTER] key	ACTION
Weight MODE (Ⅰ)	↓	Circulation Key	WEiGht	END	Weighing Mode
Count MODE (Ⅱ)	↓		CoUnt	END	Count Mode
Percent MODE (Ⅲ)	↓		PEr	END	Percent Mode
Accumulation MODE (Ⅳ)	↓		ACC	END	Accumulation Mode
		ENTER	WEiGht	END	Weighing Mode

WEIGHT MODE(Ⅰ)	
INITIAL DISPLAY	DESCRIPTION
0 →0← 0.000 kg	Weighing Mode

COUNT MODE(Ⅱ)		
INITIAL DISPLAY		DESCRIPTION
0 →0← pcs 0		Counting Mode
( ) Press the [TARE] key long to set the Count Mode in detail		
DISPLAY	KEY	DESCRIPTION
on ⓒ SAMP = Z In = t	ZERO	Input the weight of unit with sample, and go to count weighing mode
	TARE	Input the weight of unit with key value, and go to count weighing mode
End	ENTER	Go to the count weighing mode
(Ⅱ- 1) In the case of pressing the [ZERO] key		
DISPLAY	KEY	DESCRIPTION
SAMPLE		
UnLoAd		
A/D (24750)	ENTER	
LoAd A/D (24750)	ENTER	After put a sample weight on the platform, press [ENTER] key
Good /nUMbEr 10 pcs	Δ or ∇ •	After checking the message “Good” “nUMbEr” ☐ Input the number what you want (Ex) 10kg(sample) 10 , weight of unit is 1kg
Good	ENTER	After saving, go to initial display of count mode
ⓒ	ENTER	It is displayed and then go to counter mode
(- 2) In the case of pressing the [TARE] key		
DISPLAY	KEY	DESCRIPTION
WEiGht 0.500 kg	Δ or ∇ ◁	Input the weight of sample with key For example, set the 0.5kg to count ‘1’
	ENTER	After saving, go to initial display of count mode
Err 08 ⓒ		If the weight of sample is over the maximum Capacity, err 08 is displayed and return ⓒ
ⓒ	ENTER	It is displayed and then go to counter mode

PERCENT MODE(Ⅲ)		
INITIAL DISPLAY		**DESCRIPTION**
0 →0← 0.0 %		**Percent Mode**
( ) Press the [TARE] key long to set the Percent Mode in detail		
DISPLAY	**KEY**	**DESCRIPTION**
on	ZERO	After weighing the weight of 100%, go to the percent weighing mode
P SAMP = Z In = t	TARE	After weighing the weight of 100% with key, go to the percent weighing mode
End	ENTER	Go to the percent weighing mode
(- 1) In the case of pressing the [ZERO] key		
DISPLAY	**KEY**	**DESCRIPTION**
SAMPLE		
UnLoAd		
A/D (24750)	ENTER	
LoAd A/D (24750)	ENTER	After put a sample weight on the platform, press [ENTER] key
Good / Per 10 %	Δ or ∇ •	After checking the message “Good” “Per” □ Input the number what you want (Ex) 10kg(sample) 10, the weight of 1% is 1kg
Good	ENTER	After save, go to initial display of percent mode
P	ENTER	It is displayed and then go to percent mode
(- 2) In the case of pressing the [TARE] key		
DISPLAY	**KEY**	**DESCRIPTION**
WEiGht 20.00 kg	Δ or ∇ ◁	Input the weight of sample with key. Set the 20.00kg to 100%
	ENTER	After saving, go to initial display of percent mode
Err 08 P		If the weight of sample is over the maximum Capacity, err 08 is displayed and return P
P	ENTER	It is displayed and then go to percent mode

The use of key in the Counter & Percent Weighing Mode

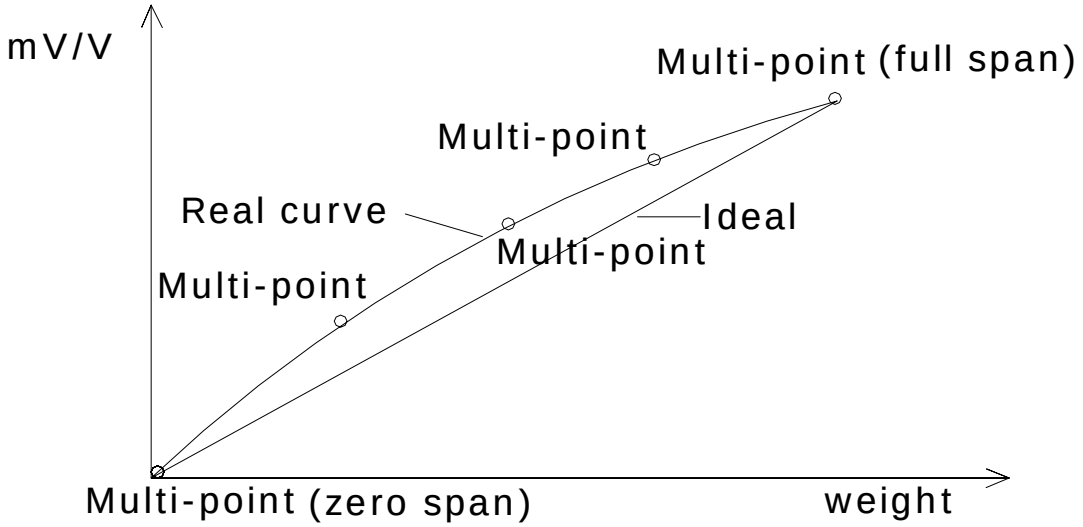
KEY		DESCRIPTION
ZERO	Short	The current value of counter or percent set to zero
	Long	Move to System mode
TARE	Short	Save the value of tare
	Long	Enter the count or percent mode to set value
GROSS/NET	Short	Display the weight of Gross or Net in turn
	Long	Move to Code mode (Product ID)
PRINT	Short	Print the current value
	Long	Print the total value
ENTER	Short	Display the current weight for 3 seconds and Return to the counter or percent mode
	Long	Move to the Function mode
UNIT	Short	Display the weight of 1-pcs(count) or the weight of 100 % for 3 seconds and return to the counter or percent mode
	Long	Power off

ACCUMULATION MODE(Ⅳ)	
INITIAL DISPLAY	**DESCRIPTION**
	**Accumulation Mode**

▯ The use of key in the Accumulation Mode

KEY		DESCRIPTION
ZERO	Short	The current value sets to zero
	Long	Move to System mode
TARE	Short	Save the value of tare
	Long	Refer to the 12 - 4. HOW to INPUT the VALUE OF TARE with ID
GROSS/NET	Short	Display the weight of Gross or Net in turn
	Long	Move to Code mode (Product ID)
PRINT	Short	Add the current weight
	Long	Print the sub total or sum total weight (After printing, the total weight is clear)
		If not connected with the printer, display err 12 and then clear the total of sub & sum
In the case of pressing the [PRINT] key long		
DISPLAY	KEY	DESCRIPTION
SUB = Z	ZERO	After printing the sub total weight, it is clear
GrAn = t	TARE	After printing the sum total weight, it is clear
ENTER	Short	Times of Adding and Total weight are displayed for 5 seconds (C = 003, 20.5kg) If you press [ZERO] key, All data is cleared
	Long	Go to the Function mode
UNIT	Long	Power Off

10. Calibration Mode



Zero and Span points to interpolate weight from Load Cell

▯ How to Go to Calibration Mode

Unfasten a Cal Switch Bolt on the rear side of indicator and then turn on power while pressing CAL switch. The display show **“rEAdY” “CALMOd”**

▯ Explain the Mode

rEAdY
C A L M o d

KIND	Weight Calibration	Gravity	Sealing Mode	Zero Calibration
Moving KEY	▷0◁	G/N	G/N	▭
	ZERO KEY	G/N Key Long	G/N KEY	PRINT KEY
	Engineer Mode	Exit Mode		
	▭	◁▷		
	PRINT Key Long	UNIT		

Weight Calibration :: (ZERO KEY - ▷○◁)

UNIT : 0 : kg 1 : lb
CAL 0 : Multi Calibration Setting
CAL 1 : Maximum Capacity Setting
CAL 2 : Minimum Division Setting
CAL 3 : Zero Calibration
CAL 4/6/8/10 : A Weight Setting (First~Fourth)
CAL 5/7/9/11 : Span Calibration (First~Fourth)

SELECT the UNIT of Weight (USA Version)				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 or 1	Unit -	0	kg
ENTER UNIT	Save and Go to next		1	lb

CAL 0

MULTI - CALIBRATION SETTING			
KEY	FUNCTION	DISPLAY	DESCRIPTION
		CAL 0	CAL 0 Condition
Δ or ∇	Increase or decrease set value	P = 1	1 Point Multi-Calibration
		P = 2	2 Point Multi-Calibration
		P = 3	3 Point Multi-Calibration
		P = 4	4 Point Multi-Calibration
ENTER UNIT	Next Menu		Save the value and go to CAL 1

1 (OFF) : You can calibrate indicator with zero calibration and span calibration.
2 ~ 4 (ON): You can set the weight what you want in the zero calibration and the setting weight (CAL 4) and span calibration (CAL 5)

CAL 1

MAXIMUM CAPACITY SETTING			
Available Setting Range : 1kg ~ 999,999kg			
KEY	FUNCTION	DISPLAY	DESCRIPTION
		CAL 1	CAL 1 Condition
△ or ▽	Increase or decrease set value	5000	5000kg
◁	Move one digit to left	10000	10000kg
ENTER	Next Menu		Save the value and go to CAL 2

Note 1. The maximum capacity means the maximum weight that the scale can measure.

CAL 2

MINIMUM DIVISION SETTING			
Available Setting Range : 0.001kg ~ 100kg			
KEY	FUNCTION	DISPLAY	DESCRIPTION
		CAL 2	CAL 2 Condition
△ or ▽	Increase or decrease set value	1	1kg
		0.01	0.01kg
ENTER	Next Menu		Save the value and go to CAL 3

Note 1. The minimum division means one division

Note 2. External resolution should be within 1/20,000.
(External resolution= a division/maximum weight).

CAL 3

ZERO CALIBRATION			
KEY	FUNCTION	DISPLAY	DESCRIPTION
		CAL 3	CAL 3 Condition
		ULoAd	Remove weight from the platter and Press UNIT KEY
		--------- Good	Performing Zero Calibration Zero Calibration is finished
ENTER	Next Menu		Save the value and go to CAL 4

Note 1. If zero calibration is finished successfully, the display shows “Good" and then you will go to CAL 4 automatically.

CAL 4

WEIGHT SETTING			
Available Setting Range : 1kg ~ 999,999kg			
KEY	FUNCTION	DISPLAY	DESCRIPTION
		CAL 4	CAL 4 Condition
△ or ▽	Increase or decrease set value	1000	1000kg
◁	Move one digit to left	2000	2000kg
ENTER	Next Menu		Save the value and go to CAL 5

Note 1. If you do not use multi calibration (P = 1), the range of setting weight should be from 10% to 100% of maximum capacity.

Note 2. If you use multi calibration (P >=2), the range of setting weight should be from 10% to 100% of maximum capacity in CAL 4, CAL 6, CAL 8 and CAL 10.

Note 3. When you set the value of weight, it means not the weight on the plat-Form + the weight being raised on but the weight being raised on the platform

CAL 5

SPAN CALIBRATION			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
		CAL 5	**Put the weight that is set in CAL 4 and then press the UNIT KEY**
		LoAd1	**Repeat this step according to multi calibration setting**
		--------- Good Save	**Performing Span Calibration Span calibration is finished Remove the weight, press ENTER KEY Move to the initial CALMOd**

Note 1. If span calibration is finished successfully, the display shows “Good"

Note 2. If span value is low, the display shows error message (Err 24).
In this case, lower the resolution

※ Repeat CAL 4 and CAL 5 according to setting of CAL 0.

For example, if you set CAL 0 to 4, perform CAL 4, CAL 5, CAL 6 , CAL 7, CAL 8, CAL 9, CAL10, and CAL11.

※ Example

Max. capacity: 5000 kg, Min. division: 1 kg, Multi calibration(CAL 0) : 4 point

A weight: 2000 kg 1EA, 1000 kg 2EA, 500 kg 1EA

CAL 0 : 4 CAL 1 : 5000 CAL 2 : 1 CAL 3 : Zero calibration

CAL 4 : 2000 CAL 5 : LOAD1 CAL 6 : 1000 CAL 7 : LOAD2

CAL 8 : 1000 CAL 9 : LOAD3 CAL 10 : 500 CAL 11 : LOAD4

Gravity Compensation :: (G/N Key Long - G/N)

If there is a different of gravity acceleration between the setting and calibration place, it can be compensated to use this function.

GRAVITY COMPENSATION			
KEY	**FUNCTION**	**DISPLAY**	**DESCRIPTION**
		G-CAL	Gravity Compensation
Δ or ∇	Increase or decrease set value	**Gr CAL 98000**	Gravity of calibration place Set the value
ENTER	Next Menu		Save and go to Gr Set
◁	Move one digit to left	**Gr Set 98000**	Gravity of using place Set the value
ENTER	Next Menu		Save and go to initial CALMod

Amsterdam	9.813 m/s²	Havana	9.788 m/s²	Paris	9.809 m/s²
Athens	9.800 m/s²	Helsinki	9.819 m/s²	Rio de Janiero	9.788 m/s²
Auckland NZ	9.799 m/s²	Kuwait	9.793 m/s²	Rome	9.803 m/s²
Bangkok	9.783 m/s²	Lisbon	9.801 m/s²	San Francisco	9.800 m/s²
Birmingham	9.813 m/s²	London	9.812 m/s²	Singapore	9.781 m/s²
Brussels	9.811 m/s²	Los Angeles	9.796 m/s²	Stockholm	9.818 m/s²
Buenos Aires	9.797 m/s²	Madrid	9.800 m/s²	Sydney	9.797 m/s²
Calcutta	9.788 m/s²	Manila	9.784 m/s²	Tainan	9.788 m/s²
Chicago	9.803 m/s²	Melbourne	9.800 m/s²	Taipei	9.790 m/s²
Copenhagen	9.815 m/s²	Mexico City	9.779 m/s²	Tokyo	9.798 m/s²
Cyprus	9.797 m/s²	Milan	9.806 m/s²	Vancouver BC	9.809 m/s²
Djakarta	9.781 m/s²	New York	9.802 m/s²	Washington DC	9.801 m/s²
Frankfurt	9.810 m/s²	Oslo	9.819 m/s²	Wellington	9.803 m/s²
Glasgow	9.816 m/s²	Ottawa	9.806 m/s²	Zurich	9.807 m/s²

Sealing Mode :: (G/N KEY - G/N)

A/D CONVERSION SPEED				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	set value ↓↑	S01 =	01	10 times per second
ENTER	Go to Next		09	90 times per second

STABLE CONDITION				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Increase or decrease set value	S02 =	11	21: Judge if the weight is changed Within 1 division for 1 sec
			~	45: Judge if the weight is changed Within 2 division for 5 sec
ENTER UNIT	Save & Go to Next		99	90: Judrge if the weight is changed Within 4.5 division for 9 sec

AUTOMATIC ZERO TRACKING (2% of MAX. CAPACITY)				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Increase or decrease set value	S03 =	11	21: Judge if the weight is changed Within 1 division for 1 sec
			:	45: Judge if the weight is changed Within 2 division for 5 sec
ENTER UNIT	Go to initial CALMod		99	90: Judrge if the weight is changed Within 4.5 division for 9 sec

Zero Calibration :: (PRINT KEY -)

ZERO CALIBRATION			
KEY	FUNCTION	DISPLAY	DESCRIPTION
ENTER	After setting the A/D value, go to initial CALMOd	ULoAd	Remove weight from the platter and Press ENTER KEY
		---------	Performing Zero Calibration
		Good	Zero Calibration is finished

Note 1. Only Zero Calibration is performed When the zero value exceeds the initial Zero range in this mode.

Engineer Mode :: (PRINT LONG KEY -)

Engineer Mode				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
ENTER	EXIT Mode	FAC 0	0	It's not item for user to set the value
UNIT			1	Please exit to press the ENTER key.

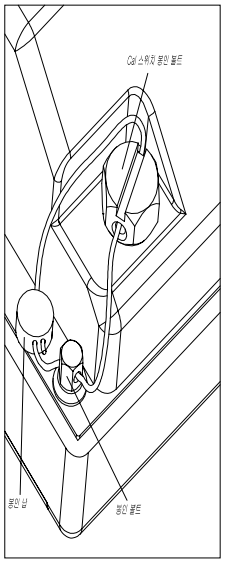
Exit Mode :: (UNIT KEY -)

After calibration mode, go to weighing mode.

Sealing Method

After calibration, you have to seal as follows.

1. Fasten the CAL Switch Bolt.
2. Connect the sealing wire as figure.
3. Press the sealing wax as figure.



11. Function Mode

How to Go to Set Mode

If you press the [ENTER] key during 3 seconds in normal mode, you can go to Function Mode after displaying

"on" and **" dEUI=Z "** **" SEt=t "**

MODE	KEY	DESCRIPTION
Set	TARE	Go to the Set Mode
Device	ZERO	Go to the Device Mode
Normal	ENTER	Go to the Normal Mode

SET Mode Menu

Menu	Description
F01	Weight Backup
F02	Set Hold Type
F03	Live-stock delay time
F04	Back-light
F05	Select the operation of Buzzer when the error is occurred
F06	Select Limit Mode
F07	Select the Method of Accumulation
F08	Front Key Lock
F09	Select the use of Key password
F10	Change the Password

WEIGHT BACKUP				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
		S E T		
Δ or ∇	Select 0 or 1	F01	0	Not use weight backup
ENTER	Save & Go to F02		1	Use weight backup (Zero, Tare….)
UNIT	Save & Exit			Save & go to Normal Mode

SET HOLD TYPE				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 3	F02	0	Compute the average value of oscillating weight
ENTER	Save & Go to F03		1	Compute the maximum value of oscillating weight
			2	Compute the current value of oscillating weight
			3	Compute the average value of weight automatically (Live-stock)
UNIT	Save & Exit			Save & go to Normal Mode

LIVE-STOCK DELAY TIME				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 1 ~ 9	F03	1	1 second
ENTER	Save & Go to F04		∫	∫
			9	9 seconds
UNIT	Save & Exit			Save & go to Normal Mode

BACK-LIGHT (201 Only)				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 3	F04	0	Always off
			1	If you press any key, back-light is on for 5 seconds
ENTER	Save & Go to F05		2	If there is a weight change, back-light is on for 5 seconds
			3	Always on
UNIT	Save & Exit			Save & go to Normal Mode

SELECT the Operation of BUZZER when ERROR is occurred				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 or 1	F05	0	Operate the buzzer
ENTER	Save & Go to F06		1	Not operate the buzzer
UNIT	Save & Exit			Save & go to Normal Mode

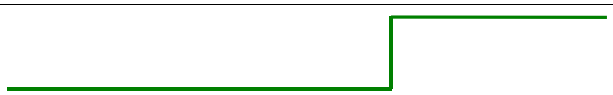
SELECT LIMIT MODE (201 Only)				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 or 1	F06	0	Not use
ENTER	Save & Go to F07		1	Checker mode
			2	Limit mode
UNIT	Save & Exit			Save & go to Normal Mode

[CHECKER MODE]

Weight / Comm / Signal	0 kg (Low Limit) 50 kg (High Limit) 100 kg	OUTPUT
ZERO		1 0
LOW		1 0
HIGH		1 0
OK		1 0

Note 1. All outputs are generated regardless of stable state.

[LIMIT MODE]

Weight / Comm / Signal	0 kg (Low Limit) 50 kg (High Limit) 100 kg	OUTPUT
ZERO		1 0
LOW		1 0
HIGH		1 0
OK		1 0

Note 1. OK signal is output when the state is stable only.

SELECT the METHOD of ACCUMULATION (201 Only)				
KEY	**FUNCTION**	**DISPLAY**	**VAL.**	**DESCRIPTION**
Δ or ∇	Select 0 ~ 2	F07	0	When the PRINT Key is pressed
ENTER	Save & Go to F08		1	Automatic accumulation - only stable state
			2	Automatic accumulation - when the state is OK in the limit mode
UNIT	Save & Exit			Save & go to Normal Mode

Note 1. If you want to modify the value which is input in the F01~F07 previously, reset to zero with [ZERO] key and then input the value what you want to with Δ or ∇ key.

KEY LOCK				
KEY	**FUNCTION**	**DISPLAY**	**VAL.**	**DESCRIPTION**
Δ or ∇	Select 0 or 1	F08	0	Not change the key lock
ENTER	Save & Go to F09		1	Set the key lock item (L01 ~ L10)
F08 = 1 (Key Lock)				
	0 : Not lock the key 1 : Lock that key Sub : Press for 3 seconds	L01	0 or 1	Zero Key
		L02		Tare Key
		L03		Gross Key
		L04		Print Key
		L05		Enter Key
		L06		Unit Key
		L07		Zero Sub Key
		L08		Tare Sub Key
Δ or ∇	Select 0 ~ 1	L09		Gross Sub Key
ENTER	Save & Next	L10		Print Sub Key
UNIT	Save & Exit			Save & go to Normal Mode

Note 1. Although key lock is set after setting the value of F08 to 1,
The value of F08(1) is not saved. Always the value of F08 is started to 0.
Same to F09 and F10.

SELECT THE RANGE of PASSWORD TO BE APPLIED				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 or 1	F09	0	Not set
ENTER	Save & Go to F10		1	Set the range of password
F09 = 1 (Set the range of password)				
ENTER		PASS	Display	
ENTER	Input password	_ _ _ 0	Using the △▽◁ key, Input the password	
		Good	4 digits	
△ or ▽	Select 0 or 1	PASS - 0	Not set the Enter key password	
		PASS - 1	Set the Enter key password	
UNIT	Save & Exit		Save & go to Normal Mode	

Note 1. If the password is not correct, the message of "AgAIn" is displayed.
If you failed three times continuously, the message of "Fail" is displayed and exit this mode automatically.

SELECT THE CHANGE OF PASSWORD				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 or 1	F10	0	Not change the password
ENTER	Save & go to Normal mode		1	Change the password
F10 = 1 (Change the password)				
ENTER		PASS	Display	
ENTER	Input password	_ _ _ 0	Using the △▽◁ key, Input the password	
		Good	4 digits	
△▽◁		PASS 1	Input the new password	
ENTER		_ _ _ 0		
△▽◁		PASS 2	Input the new password again	
ENTER		_ _ _ 0		

Note 1. The password when the product is put out is 1234.
If PASS2 is not same to PASS1, it's displayed Err-32 and then return to input mode of PASS1.

DEVICE Mode

Menu	Description	Menu	Description
D01	Device ID	**D08**	Automatic print
D02	COM1(RS-232) use	**D09**	Line feed
D03	COM1 transmission method	**D10**	Select print format
D04	COM1/2 Baud rate	**D11**	Select date print format
D05	COM2 (RS-422) use	**D12**	Select Product ID print
D06	COM2 transmission method	**D13**	Select user's message print
D07	Printer type	**D14**	Set the current clock

DEVICE ID				
KEY	**FUNCTION**	**DISPLAY**	**VAL.**	**DESCRIPTION**
Δ or ∇	**Increase or decrease set value**	**d01**	**00 ~ 99**	**01: ID=0, 99: ID=99 If you use a system, you can identify each indicator by this device ID If you set it to 00, there is no transmission response cause 00 means that is no device**
ENTER	**Save & Go to d02**			
UNIT	**Save & Exit**			**Save & go to Normal Mode**

COM1 (RS-232) USE				
KEY	**FUNCTION**	**DISPLAY**	**VAL.**	**DESCRIPTION**
Δ or ∇	**Select 0 ~ 3**	**d02**	**0**	**Do not use COM1**
			1	**CAS Protocol (22 bytes)**
ENTER	**Save & Go to d03**		**2**	**Limit Protocol (22 bytes)**
			3	**Printer Mode**
UNIT	**Save & Exit**			**Save & go to Normal Mode**

COM1 TRANSMISSION METHOD				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 3	d03	0	No data output
			1	Transmit in stable & unstable condition
ENTER	Save & Go to d04		2	Transmit only in stable condition
			3	Command mode
UNIT	Save & Exit			Save & go to Normal Mode

COM1/2 (RS-232/422) BAUD RATE						
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 4	d04	0	2400 bps	3	19200 bps
			1	4800 bps	4	38400 bps
ENTER	Save & Go to d05		2	9600 bps		
UNIT	Save & Exit			Save & go to Normal Mode		

COM2 (RS-422) USE				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 3	d05	0	Do not use COM2
			1	CAS Protocol (22 bytes)
ENTER	Save & Go to d06		2	Limit Protocol (22 bytes) 201
			3	Printer Mode
UNIT	Save & Exit			Save & go to Normal Mode

COM2 TRANSMISSION METHOD				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 3	d06	0	No data output
			1	Transmit in stable & unstable condition
ENTER	Save & Go to d07		2	Transmit only in stable condition
			3	Command mode
UNIT	Save & Exit			Save & go to Normal Mode

PRINTER TYPE				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 2	d07	0	Do not use
ENTER	Save & Go to d08		1	DLP (Label printer)
			2	DEP (Roll printer)
UNIT	Save & Exit			Save & go to Normal Mode

AUTOMATIC PRINT				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 2	d08	0	Do not use
ENTER	Save & Go to d09		1	When the weight is stable
			2	When the weight is OK in limit mode
UNIT	Save & Exit			Save & go to Normal Mode

LINE FEED				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0,1,5	d09	1	1 line feed
ENTER	Save & Go to d10		|	
			5	5 line feed
UNIT	Save & Exit			Save & go to Normal Mode

SELECT the PRINT FORMAT				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
Δ or ∇	Select 0 ~ 1	d10	0	Format 1
ENTER	Save & Go to d11		1	Format 2
UNIT	Save & Exit			Save & go to Normal Mode

Format 1	Total Format
2004.06.24 14:32:54	----------
001 ID_01 120.52 kg	ID_01 TOTAL
002 ID_01 100.50 kg	----------
003 ID_01 50.28 kg	2004.06.24 14:32:54
	COUNT 22
Format 2	WEIGHT 4234.48kg
2004.06.24 14:32:54	----------
No. 001 ID_01	GRAND TOTAL
Gross : 120.52kg	----------
Tare : 50.00kg	2004.06.24 14:32:58
Net : 72.52kg	COUNT 123
	WEIGHT 23423.42kg

Note 1. The No which is able to be printed is from 1 to 999.

Note 2. The unit of weight is changed by the mode (kg/lb)

SELECT the FORMAT of DATE				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 ~ 2	d11	0	Do not print the date
ENTER	Save & Go to d12		1	Always print the date
			2	Only print one time after Total printing or product ID is changed
UNIT	Save & Exit			Save & go to Normal Mode

SELECT the FORMAT of PRODUCT ID				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 ~ 1	d12	0	Do not print the Product ID
ENTER	Save & Go to d13		1	Always print the Product ID
UNIT	Save & Exit			Save & go to Normal Mode

SELECT the FORMAT of USER'S Message Print				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 ~ 1	d13	0	Do not print the user's message
ENTER	Save & Go to d14		1	Always print the user's message
UNIT	Save & Exit			Save & go to Normal Mode

Note 1. How to input the format of user's message print is explained chapter 14 CAS & Command Mode Protocol in detail.

SELECT CLOCK				
KEY	FUNCTION	DISPLAY	VAL.	DESCRIPTION
△ or ▽	Select 0 ~ 1	d14	0	Do not use clock
ENTER	Go to next		1	Use clock
Change date / time (Ex. 2004.08.31 14:28:47) [d14 = 1]				
KEY	FUNCTION	DISPLAY	DESCRIPTION	
△ or ▽	Increase or decrease	C1 : 04	Year : 2004	
		C2 : 08	Month : 08	
◁	Shift to one digit to left	C3 : 31	Day : 31	
		C4 : 14	Hour : 14	
ENTER	Save & go to weighing mode	C5 : 28	Minute : 28	
		C6 : 47	Second : 47	
UNIT	Save & Exit		Save & go to Normal Mode	

Note 1. Although key clock is set after setting the value of d14 to 1, the value of d14(1) is not saved. Always the value of d14 is started to 0.

12. How to use (Weighing Mode Only)

12 - 1. HOW to SET the Original Number (ID) of Goods

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	0kg	Empty	
2	1500kg	Goods(Iron)	Weight(1500kg)
3	Press [G/N] key for 3 seconds. Display : "CodE=z LiM=t tArE=g"		"COdE"
4	Press [ZERO] key and input 10		Input ID(=10) of iron
5	Press [ENTER] key	Goods(Iron)	Show the ID of goods Display the weight

Note 1. The ID of goods can be from 0 to 19.

12 - 2. HOW to INPUT the Value of Maximum and Minimum (201 Only)

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	0.0kg	Empty	
2	150.0kg	Goods(Iron)	
3	Press [G/N] key for 3 seconds		
4	Press [TARE] key and then display "HI"		
5	Input the value of 1,000	Iron	Maximum : 100.0kg
6	If it's displayed the "LO", Input the value of 900.	Iron	Minimum : 90.0kg
7	Press [ENTER] key	Iron	It is input the Max. and Min. value in this ID

Note 1. If the weight is larger than maximum, display "HI".
If the weight is smaller than minimum, display "LO".
If the weight is between maximum and minimum, display "OK".
It is possible for F06 to set 2 (checker).

12 - 3. HOW to INPUT the VALUE OF TARE DIRECTLY

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [TARE] key for 3 seconds	Empty	
2	It's displayed "tArE = z" "t-id = t", press [ZERO] key	Empty	
3	Input the value of tare which you know already with key		
7	Press [ENTER] key and exit		

12 - 4. HOW to INPUT the VALUE OF TARE with ID

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [G / N] key for 3 seconds	Empty	
2	It's displayed "CodE=z LiM=t tArE=g", press [ZERO] key	Empty	
3	Set the id what you want to press [G / N] key.		
4	If the step 2 is displayed, press [ZERO] key		
5	Input the value of tare & press [ENTER]		
6	Repeat from step 2 to step 5 if you want		
7	Press [ENTER] key and exit		

12 – 5. HOW to READ the VALUE OF TARE with ID

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [TARE] key for 3 seconds	Empty	
2	It's displayed "tArE = z" "t-id = t", press [TARE] key.	Empty	
3	Input the ID which you want with key & press [ENTER] keu		
7	Press [ENTER] key and exit		

12 – 6. HOW to INPUT the SAMPLE OF COUNT MODE (201 Only)

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [ZERO] key for 3 seconds	Empty	
2	It's displayed "Sys", Enter the counter mode with [G / N] key		
3	Press [TARE] key for 3 seconds		
4	It's displayed "SAMP=Z in=t", press [ZERO] key		
5	After displaying "SAMPLE" "UnLoAd" "A/D value", press ENTER Key and then after displaying "LoAd" "A/D value" put the sample on the platform and press [ENTER] key	Sample	
6	Display : "Good" "nUMbEr" "0 pcs"		
7	Using the △▽◁ key, input the number	Sample	
8	Press [ENTER] key	Sample	

12 – 7. HOW to INPUT the VALUE OF COUNT MODE DIRECTLY (201 Only)

STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [ZERO] key for 3 seconds	Empty	
2	It's displayed "Sys", Enter the counter mode with [G / N] key		
3	Press [TARE] key for 3 seconds		
4	It's displayed "SAMP=Z in=t", press [TARE] key		
5	Display : "WEiGht" "000kg" Using the △▽◁ key, input the weight of one sample	Sample	
6	Press [ENTER] key	Sample	

12 – 8. HOW to INPUT the SAMPLE OF PERCENT MODE (201 Only)

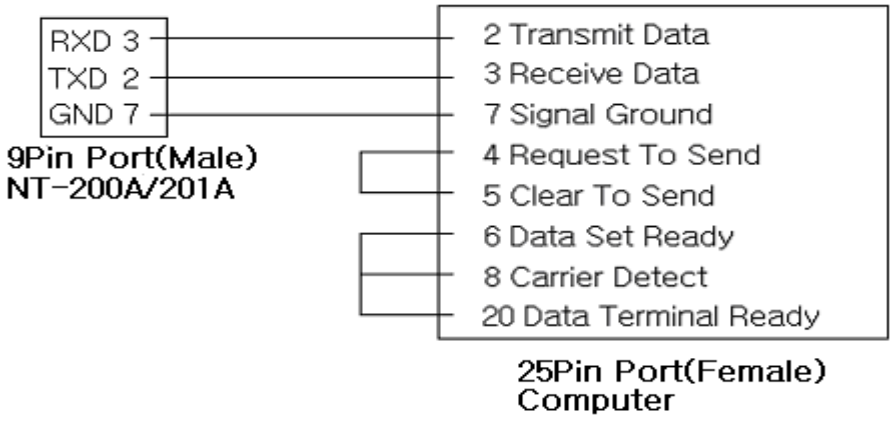
STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [ZERO] key for 3 seconds	Empty	
2	It's displayed "Sys", Enter the percent mode with [G / N] key	Empty	
3	Press [TARE] key for 3 seconds		
4	It's displayed "SAMP=Z in=t", press [ZERO] key		
5	After displaying "SAMPLE" "UnLoAd" "A/D value", press ENTER Key and then after displaying "LoAd" "A/D value" put the sample on the platform and press [ENTER] key	Sample	
6	Display : "Good" "Per" "0 %" Using the △▽◁ key, input the percent of one sample	Sample	
7	Press [ENTER] key	Sample	

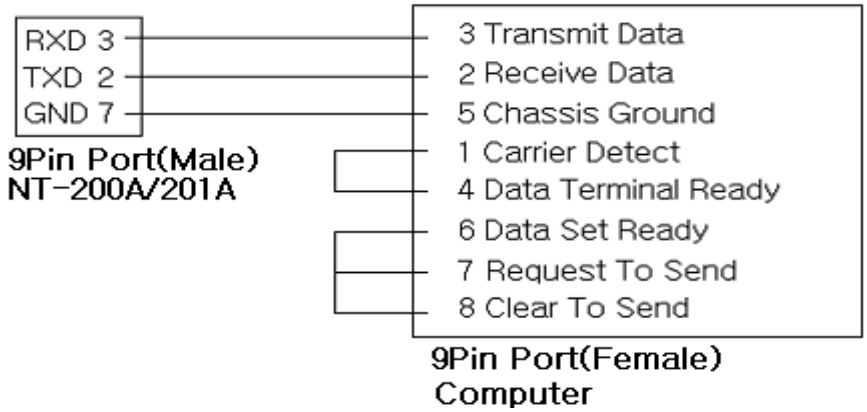
12 – 9. HOW to INPUT the VALUE OF PERCENT MODE DIRECTLY (201 Only)

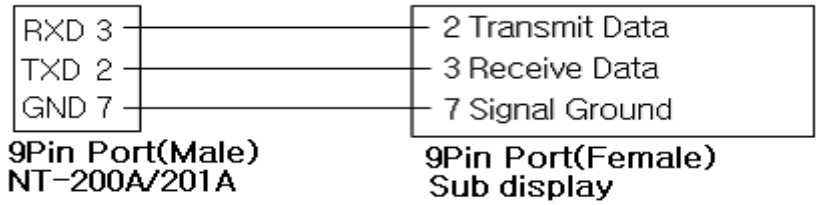
STEP	VFD DISPLAY and KEY INPUT	PLATFORM	DESCRIPTION
1	Press [ZERO] key for 3 seconds	Empty	
2	It's displayed "Sys", Enter the percent mode with [G / N] key		
3	Press [TARE] key for 3 seconds		
4	It's displayed "SAMP=Z in=t", press [TARE] key		
5	Display : "Good" "00000kg" Using the △▽◁ key, input the weight of 100% sample	Sample	
6	Press [ENTER] key	Sample	

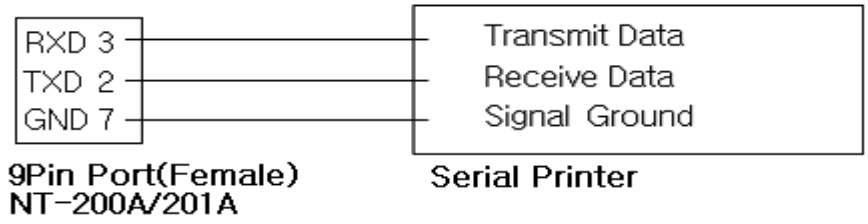
13. Communication

How to connect PC (COM1)





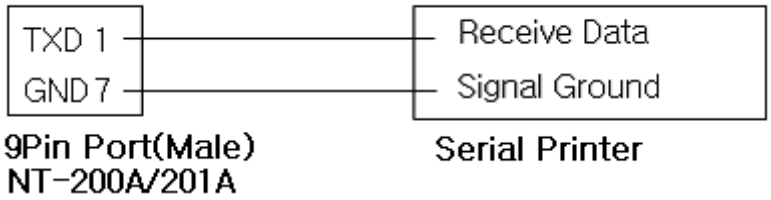


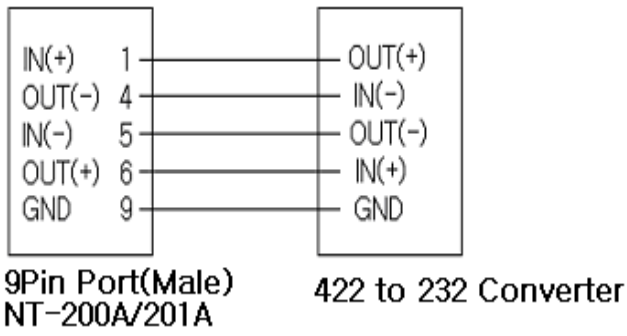


OPTION (RS-485/422 :: COM2 & CLOCK)

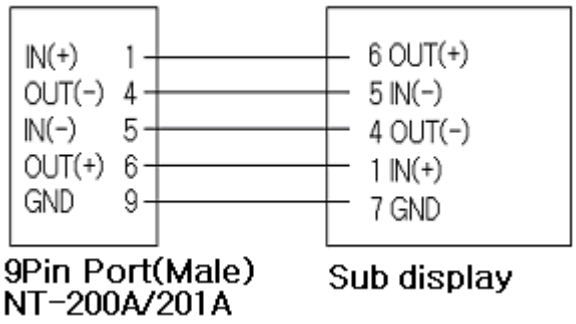
Real Time Clock

How to connect to printer (COM2)





Signal	Pin No.	Description
IN(+)	1	COM2 (Input RS-422)
(RxD)	2	COM1 (Input RS-232)
(TxD)	3	COM1 (Output RS-232)
OUT(-)	4	COM2 (Output RS-422)
IN(-)	5	COM2 (Input RS-422)
OUT(+)	6	COM2 (Output RS-422)
Signal Ground	7	GND(RS-232)
(TxD)	8	COM2 (Output RS-232)
Signal Ground	9	GND(RS-232)



14. CAS & Command Mode Protocol

▯ CAS Protocol (22 bytes) – ASCII Code

ⓐ	ⓑ	,	ⓒ	ⓓ	,	ⓔ	ⓕ	,	Weight Data (8byte)	ⓖ	ⓗ	ⓘ	ⓙ	ⓚ

	ST (Stable), US (Unstable), OL (Over Load)				
	GS (Gross), NT (Net)				Device ID
ⓕ	Lamp condition		Blank	ⓗ	k
ⓘ	g	ⓙ	CR	ⓚ	LF

Note. 1 Device No. is the successive value of ASCII code.

Ex) Device No. 01 : 0x31, Device No. 09 : 0x39, Device No. 13 : 0x3d

▯ Limit Protocol (22 bytes)

ⓐ	ⓑ	ⓒ	ⓓ	ⓔ	ⓕ	ⓖ	Weight Data (8byte)	ⓗ	ⓘ	ⓙ	ⓚ	ⓛ	ⓜ	ⓝ

	ST (Stable), US (Unstable), OL (Over Load)				
	GS (Gross), NT (Net)				Device ID
ⓕ	Lamp condition		Code (ASCII)	ⓗ	Blank
ⓘ	Zero signal	ⓙ	Low limit	ⓚ	High limit
ⓛ	OK signal	ⓜ	CR	ⓝ	LF

Note. 1 The Zero signal is on within 10 division.

Note. 2 When the signal of Zero(ⓘ) ~ OK(ⓛ) is on, the data is 0x31,

When the signal of Zero(ⓘ) ~ OK(ⓛ) is off, the data is 0x30.

Command Mode Protocol

Command (ASCII code)	Description		State
HI	High Limit Value	201	Read / Write
LO	Low Limit Value		Read / Write
KT	Key Tare Value		Read / Write
CO	Code Value		Read / Write
WT	Current Weight		Read
ZE	Operating like the ZERO key		Read
TR	Operating like the TARE key		Read
GN	Operating like the Gross/Net key		Read
ID	Change Device ID		Read
HD	Operating like the ENTER key		Read
PR	Operating like the PRINT key		Read
TP	Operating like the Total Print key		Read
PW	Power off		Read

Read

1	2	3	4	5
Device ID	Command		CR	LF

Note. 1 Device ID is hex and Command is ASCII

[Ex] Device ID is 13 when user want to know the current weight.

-> 0x0d 0x57 0x54 0x0d 0x0a

Write

1	2	3	4	5	6	7	8	9	10
Device ID	Command		DATA (Not include decimal point)					CR	LF

Note. 1 Device ID is hex and DATA is ASCII

[Ex] When user want to change hi limit weight (10.50kg).

-> 0x02 0x48 0x49 0x30 0x31 0x30 0x35 0x30 0x0d 0x0a

Note. 1 When Device ID and Code is changed, Data value is HEX and 1byte.

P.S.

1. To input the command, set the value D02=1 or 2, D03=3 when com1 uses and D05=1 or 2, D06=3 when com2 uses.

CAS DLP Protocol

VARIABLE	DESCRIPTION
V00	Gross Weight (8 bytes)
V01	Tare Weight (8 bytes)
V02	Net Weight (8 bytes)
V03	Barcode (net weight) (8 bytes)
V04	Number of count when count mode (8 bytes)
V05	Percentage when percent mode (8 bytes)

It is impossible to print the weight, count and percentage at the same time.

If you do, only one data which is met the current mode can be printed correctly

User's Output Message Protocol

Command (ASCII code)	DESCRIPTION	STATE
UM	User's Output Message	Write

The Max. length of message is 40-byte. You have to input the 0xFF in the last byte.

It is printed the 20 bytes in one line and message is printed on the left-top

Explanation of abbreviation on the display

Abbreviation	Description	Abbreviation	Description
"LOC"	Key Lock	"UnLoad"	Empty the platform
"PASS"	Input password	"CALMod"	Calibration mode
"A6Ain"	Input password again	"OUEr"	Over the Max. capa.
"Good"	Good job	"SyS"	System mode
"LoAd"	Put the weight	"Per"	Percent mode

ASCII CODE

Letter	Hex	Letter	Hex	Letter	Hex	Letter	Hex	Letter	Hex
	20	4	34	H	48	\	5C	p	70
!	21	5	35	I	49	]	5D	q	71
“	22	6	36	J	4A	^	5E	r	72
#	23	7	37	K	4B	_	5F	s	73
$	24	8	38	L	4C	‘	60	t	74
%	25	9	39	M	4D	a	61	u	75
&	26	:	3A	N	4E	b	62	v	76
‘	27	;	3B	O	4F	c	63	w	77
(	28	<	3C	P	50	d	64	x	78
)	29	=	3D	Q	51	e	65	y	79
*	2A	>	3E	R	52	f	66	z	7A
+	2B	?	3F	S	53	g	67	{	7B
,	2C	@	40	T	54	h	68	|	7C
-	2D	A	41	U	55	i	69	}	7D
.	2E	B	42	V	56	j	6A	~	7E
/.	2F	C	43	W	57	k	6B	END	FF
0	30	D	44	X	58	l	6C		
1	31	E	45	Y	59	m	6D		
2	32	F	46	Z	5A	n	6E		
3	33	G	47	[	5B	o	6F		

15.Error Message & Trouble Shooting

Error	Reason	Solution
Err 01	Initial value of A/D is fail	Check the L/C connector & test A/D conversion in Test Mode 2
Err 02	Load cell connection failure, Error in A/D conversion part	Check the L/C connector & test A/D conversion in Test Mode 2
Err 05	Input value is over the range	Input the value from 32 to 255
Err 07	Product ID is larger than 19	The range of Product ID is 0 to 19
Err 08	Hi limit weight is larger than Maximum weight	Set the Hi limit weight to under the maximum weight
Err 09	Low limit weight is larger than hi limit weight	Set the Low limit weight to under the Hi limit weight
Err 11	The unit of weight is different	Can't process cause the unit of weight calibration is not same
Err 13	Zero value exceeds the initial zero range	Remove a weight from the platter and turn on power
Err 21	The resolution exceeds 1/20,000	Lower the resolution
Err 22	The weight for span calibration is set to under 10% of maximum capacity	The weight of Span calibration Should be set to over 10% of max. Capacity (Check it in CAL 1)
Err 23	The weight for span calibration is set to over 100% of maximum capacity	The weight of Span calibration Should be set to under 100% of max. capacity (Check it in CAL 1)
Err 24	The value of Span is high or low	Adjust resolution
Err 31	The password before and the cur- rent password are not same	Input the new password again
Err 32	The number of sample is too low	Put more samples or Decrease the number of samples
Err 50	Internal memory data is erased	The product is in trouble Contact the A/S center