

SI550

Digital indicator

User manual

Manual Ver 3.05

Program Ver 3.03



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1. Precautions

1-1. Caution / Warning Mark



This mark warns the possibility to arrive death or serious injury in case of wrongly used.

- 1) Do not drop the product and avoid serious external damage on it.
- 2) Do not install the product under direct sunshine or severe vibration.
- 3) Do not install the product under conditions with high voltage or severe electric noise.
- 4) Turn off the power when you use it with external input devices.
- 5) Do not sprinkle water on the product or avoid rainy conditions.



Caution Mark means there is possibility to cause material loss if the product was not handled in a proper way.

- 1) The products can be changed without previous notice as the version is upgraded.
- 2) As version is upgraded the product version increases and all of the function will remain if possible.
- 3) Do not use the product at conditions with fluctuating temperature or severe vibration.

1-2. Copyrights

- 1) All rights are reserved by SEWHACNM Co., LTD.
- 2) Any kind of copy or distribution is prohibited without permission from SEWHACNM Co., LTD.
- 3) This manual can be changed without previous notice as the version is upgraded. If you have any kind of inquiries, please contact your local agent or the Headquarter, SEWHACNM Co., LTD.

1-3. Inquiries

If you have any inquiries about our products, please contact us at following address.

- 1) Headquarter : SEWHACNM Co., LTD
- 2) Homepage : <http://www.sewhacnm.co.kr>
- 3) E-mail : sales@sewhacnm.co.kr

2. Introduction

2-1. Introduction

Thank you for Purchasing “SI 550”, the digital weighing indicator. This product is a high-quality indicator with weighing control program. Plus, Current Loop for external display and RS232C Interface with Modbus Protocol are available for user’s convenience.

User can choose various options like Serial Interface (Modbus RTU), Ethernet (TCP/IP), Analog Out, BCD IN/OUT and SD Memory card.

Please learn and review this manual before use it and enjoy all of the function of this product.

2-2. Features

- 1) It is convenient to install this product into a control box as a panel type.
- 2) This product is resistant to dust or moisture since display part is covered with polycarbonate film.
- 3) RS232C and Current loop interface available (Modbus Protocol including)
- 4) You can choose various options as below.
 - Serial interface RS232C / RS422 / RS485
 - Ethernet interface (TCP/IP)
 - Analog Output 4~20mA, 0~10V
 - Parallel interface BCD out / BCD in
 - Data storage device (SD Memory Card)

2-3. Components

		
Indicator	Manual	Power Cable
		
D-Sub Connector (25 Pin)	D-Sub Connector Hood Set	

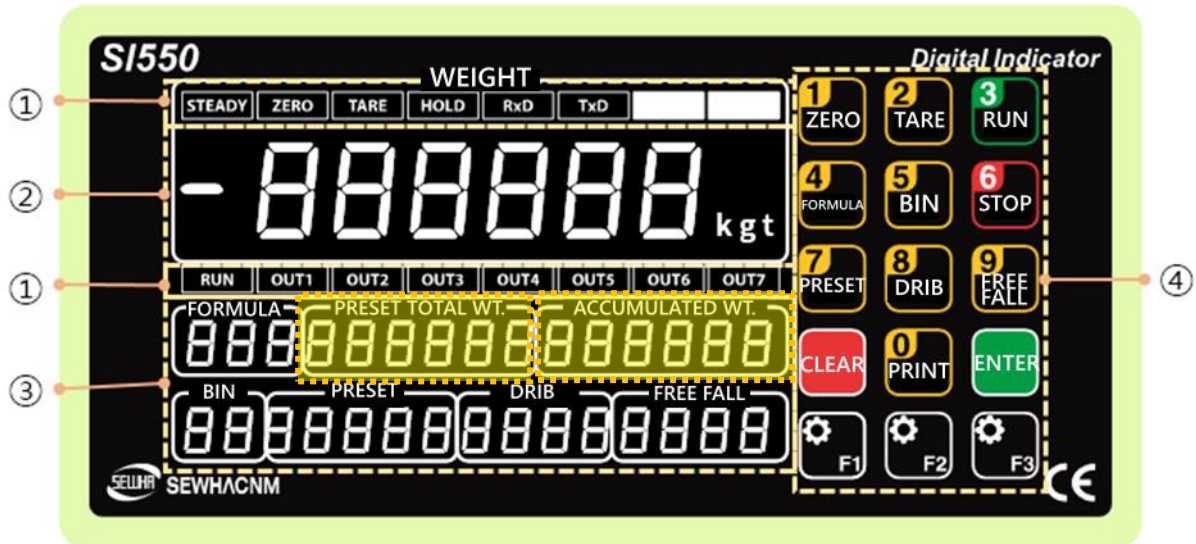
3. Specification

3-1. Specification

Content		Specification	
Load Cell Input Analog Signal	Display Resolution	1/20,000	
	Internal Resolution	1/2,000,000 ($\pm 1,000,000$)	
	Input Sensitivity	Min 0.1 μ V/V	
	Max Signal Input Voltage	Max 3.2mV/V	
	Load Cell Excitation	DC +5V	
	A/D Converting Method	Sigma-Delta	
	Decimal Point	0, 0.0, 0.00, 0.000	
	Drift	Zero	10PPM/ $^{\circ}$ C
		Span	10PPM/ $^{\circ}$ C
Non Linearity	0.005% Max		
Operating Environment	Operating Temperature Range	-10 $^{\circ}$ C ~ +40 $^{\circ}$ C [14 $^{\circ}$ F ~ 104 $^{\circ}$ F]	
	Operation Humidity Range	40% ~ 85% RH, No Condensation	
Front	Display	1. Main : 0.8 inch(20.36mm), Red/Green FND 2. Sub : 0.36 inch(9mm), Red FND 3. State(word) 16 digits, Red/Green FND	
	Key	15EA	
Interface	External Input	6EA, Dry Contact(Zero Voltage Contact)	
	Relay Out	7EA Contact rate: 250V 5A AC / 30V 3A DC	
	Serial interface	RS232C	PC, PLC, Printer, etc.
		Current Loop	External display
Power	AC : 100~240V, 50~60Hz, 0.5A		
Size	200mm(W) x 100mm(H) x 140mm(D), 1.2Kg		
Option	OP-01	Serial Interface	RS-422
	OP-02		RS-485
	OP-03		RS-232C
	OP-04	Ethernet Interface	TCP/IP
	OP-05	Analog Output	Iout (4~20mA)
	OP-06		Vout (0~10V)
	OP-07	Parallel Interface	BCD OUT
	OP-08		BCD IN(Number input)
	OP-09	Data storage device	SD memory card

3-2. Front

3-2-1. Display and keypad



① Condition

- STEADY : Current weight is steady
- ZERO : Current weight is zero
- TARE : Using Tare function
- RxD : Receiving data via RS232C
- TxD : Transmitting data via RS232C
- RUN : Weighing mode is running
- OUT1 : OUT1(Relay) ON
- OUT2 : OUT2(Relay) ON
- OUT3 : OUT3(Relay) ON
- OUT4 : OUT4(Relay) ON
- OUT5 : OUT5(Relay) ON
- OUT6 : OUT6(Relay) ON
- OUT7 : OUT7(Relay) ON

② Main Display : Weight, Words, Unit

③ Sub-display : Formula, Preset Total WT., Accumulated WT., BIN, etc

























- PRESET Total Wt. : sum of whole setting values of current formula
- Accumulated Wt. : sum of Bin finish value of current formula

④ Keypad

3-2-2. Key

	- Set zero point
	- Set Tare - Reset Tare
	- Run batch weighing mode according to formula setting
	- Save mixture formula (Maximum 50EA)
	- Save BIN number for materials (Maximum 20EA)
	- Stop batch weighing mode
	- BIN PRESET (target value) Setting
	- BIN Drib Setting
	- BIN Free Fall Setting
	- Print displayed weight value (Transmit the data to printer)
	- Press 4 times within 3secs to enter Function Mode.
	- Press 4 times within 3secs to enter Hidden Function Mode.
	- Cancel or Move to Previous Step.
	- Save and Move to Next Step.

3-2-3. Key combination

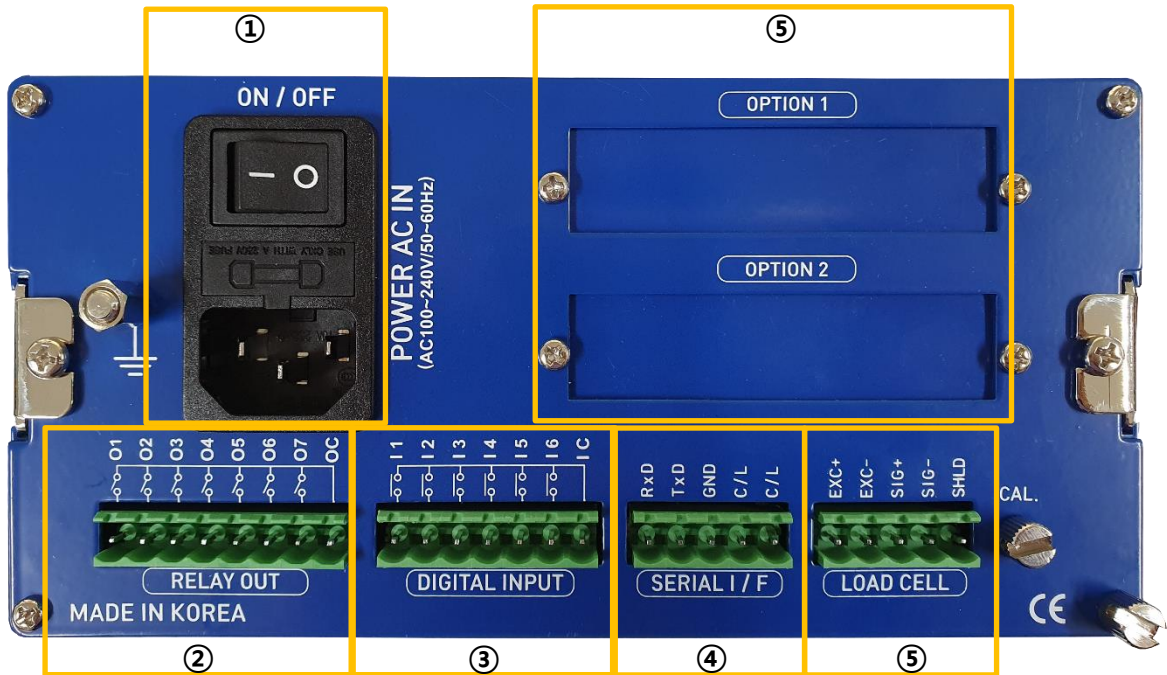
	→		Input Tare weight with number keys
	→		Max Tare weight (under setting F532-0)
	→		Min Tare weight (under setting F532-0)
	→		Forced discharge or Forced Batch Finish
	→		Under-value for Fixed Quantity
	→		Over-value for Fixed Quantity
	→		Print Sub-total
	→		Delete Sub-total
	→		Print Total of current Part number
	→		Delete Total of current Part number
	→		Print Total of whole Part numbers
	→		Delete Total of whole Part numbers

- The maximum of weighing counting number is 999,999. It will be initialized when it is over the max value.
- The maximum of cumulative weighing counting number is 999,999,999. It will be initialized when it is over the max value.

3-2-4. External Input / Relay Out Specification

External Input		Relay Out	
External Input 1	BIN Run	Relay Out 1	1-Stage
External Input 2	BIN Stop	Relay Out 2	PRESET
External Input 3	BIN Forced Discharge	Relay Out 3	BIN Finish
External Input 4	BATCH Reset	Relay Out 4	BATCH Finish
External Input 5	Zero	Relay Out 5	Error
External Input 6	None	Relay Out 6	Running
※ Able to set on F156~161		Relay Out 7	Near Zero
		※ Able to set on F141~147	

3-3. Rear Panel



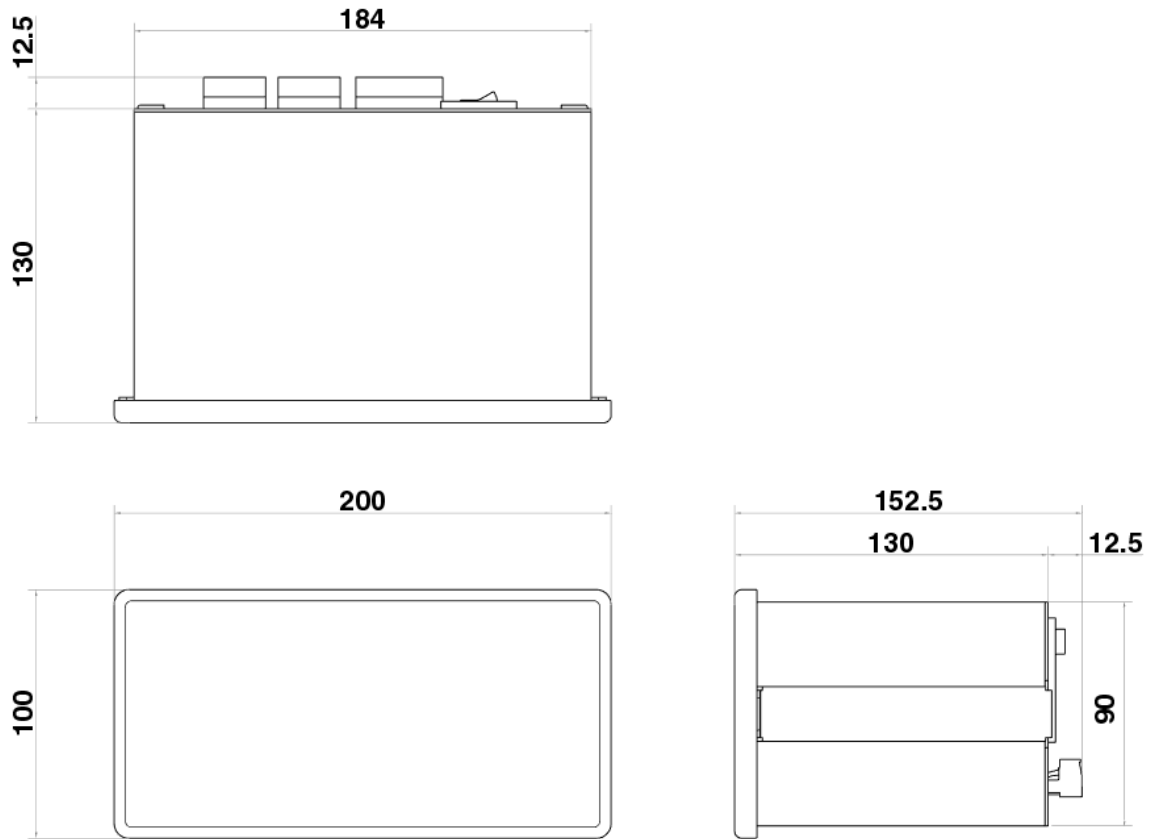
- ① AC Power Input Terminal
- ② Relay Out Terminal (F141~147)
01~07: Relay Out 1~7 / OC: Relay Out Common Terminal
- ③ External Input Terminal (Dry Contact : zero voltage point)
- ④ Serial Interface Terminal
RS-232C and Current loop included
- ⑤ Load Cell Terminal
- ⑥ Option port (Selectable)



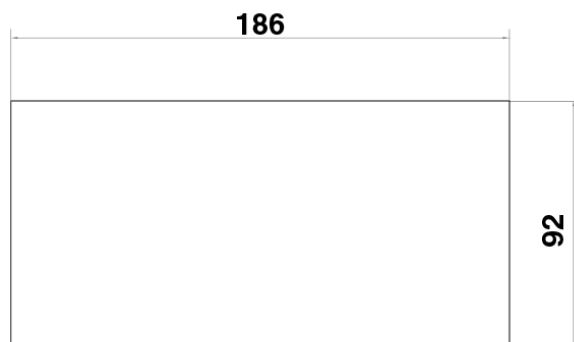
Check the specification of the each terminal written on the panel when you connect the product to other devices.

4. Installation

4-1. Size (Unit: mm)



4-2. Panel Cutting Size (Unit: mm)



4-3. How to connect Load cell to Indicator

How to install load cell input terminal

(The color of the cables can differ from each manufacturer.)



1. If you use tension type of load cell as compression type, connect SIG+ and SIG- crossly.
2. The product can be damaged if you connect other cable to load cell input terminal.
3. Turn off the power of the indicator during connection to load cell.
4. Do not weld around the device.
(Parts of internal circuit of indicator or load cell can be broken during arc welding or electric welding.)



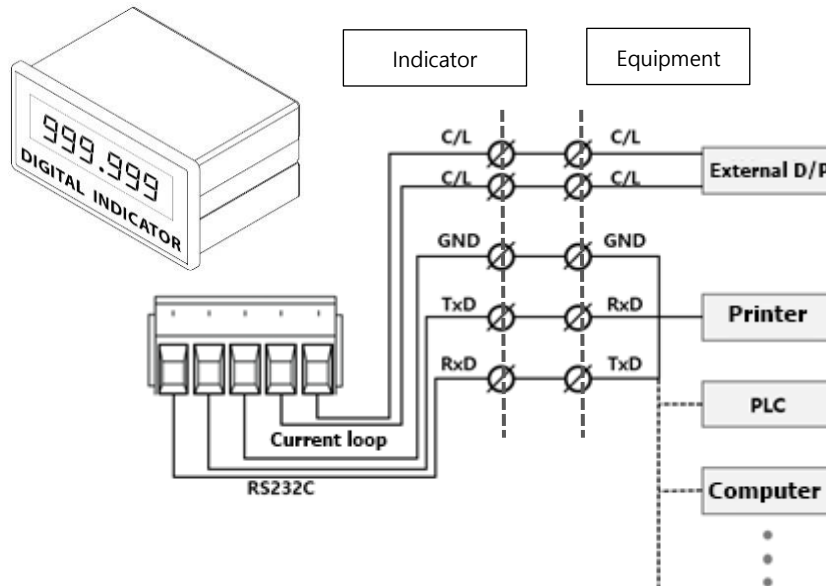
※ Precautions for Indicator-Load Cell Connection

1. You can use a maximum of 8 load cells. (350Ω standard)
2. The product has to be horizontal to the ground for more precise value.
3. Use summing box to adjust output deviation minimally when you install load cell more than two. (Each output gap can cause a margin of error.)
4. Change in temperature can cause a margin of error.
5. Do not weld around the device. If you need, disconnect every cable of indicator.
6. If you weigh static electricity, use earth shield wire or other ways to protect static electricity flowing in Indicator.

4-4. External Equipment Connection

4-4-1. Serial Interface (Basic Option) – RS232C and Current loop

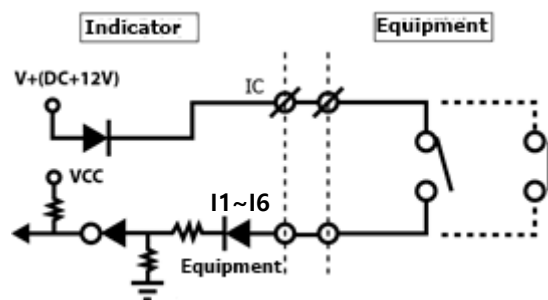
- 1) RS232C interface is vulnerable to electric noise. It is mainly used for Short distance communication (within 10m approximately) like computer, PLC, External Display, and etc.



- 2) Current Loop Interface is much stronger against electric noise than RS232C Interface, so Current Loop is adequate for middle distance communication (within 100M approximately) like External display.

4-4-2. External Input (Basic Option) – Input 6EA

- 1) Each external digital Input can be set on F156~161.
- 2) Dry contact for Input Signal



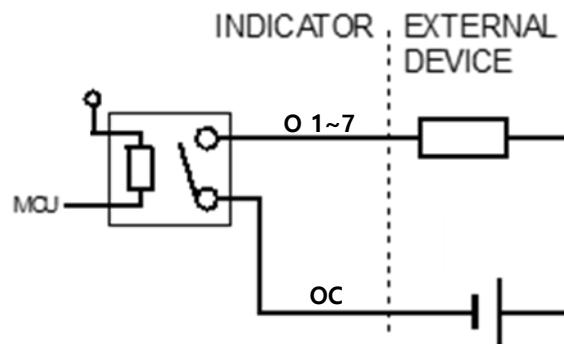
- 3) Terminal Component
 - I C : Common Input terminal (V+ : 12V DC)
 - I 1~ I 6 : Input signal (Zero voltage point-relay or switch signal)

4-4-3. Relay Out (Basic Option) – Output 7EA

- 1) Each external digital Input can be set on F141~147.
- 2) Output is Basically A contact, you can choose and use what you want on F149~155 after setting F148-01.

3)

Contact Ratings VDC	Contact Ratings VAC
30V 3A	250V 5A



- 4) Terminal Component
 - OC : Common Output terminal
 - O1~O7 : Output signal (Output relay: zero voltage point-relay or switch signal)

5. Set-up

5-1. Calibration

Calibration is a work to correct linearity from zero to Max Capacity, which becomes standard when an indicator displays the current weight.



- When enter Calibration mode, Tare/Hold/Print function is initialized.
- Preheat the Indicator for 5 minutes before Calibration to get more exact result.

Step 1. Enter Calibration mode

Press CAL Key






<CAL key position>

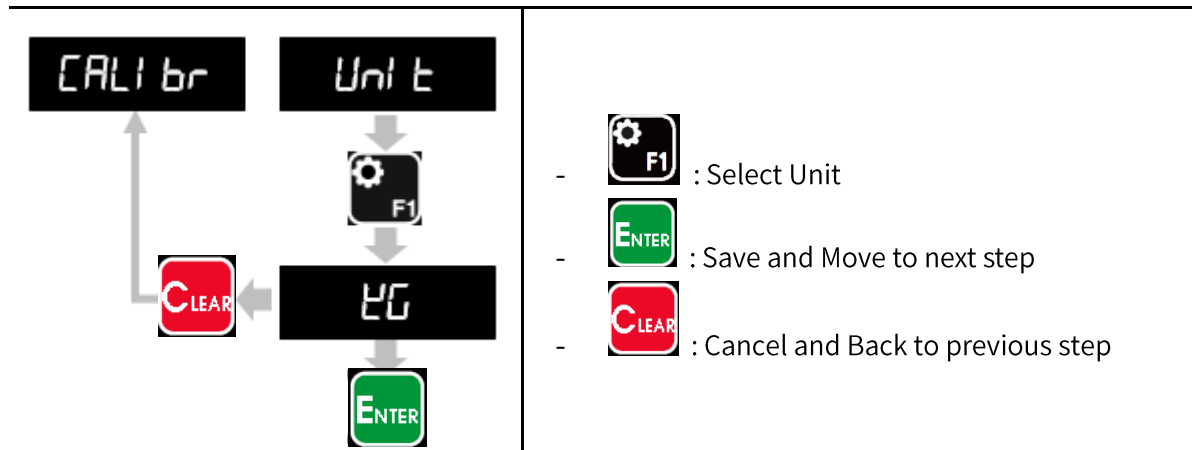


Remove "CAL-BOLT" on the Rear panel and press "CAL key" inside.

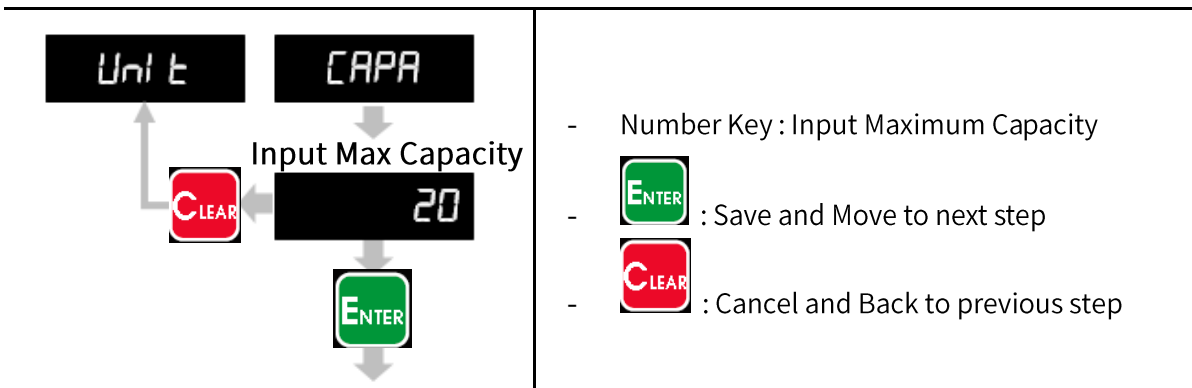
<Key Explanation>

-  : Select Calibration Mode
-  : Save and Move to next step
-  : Cancel and Back to previous step

Step 2. Set Unit

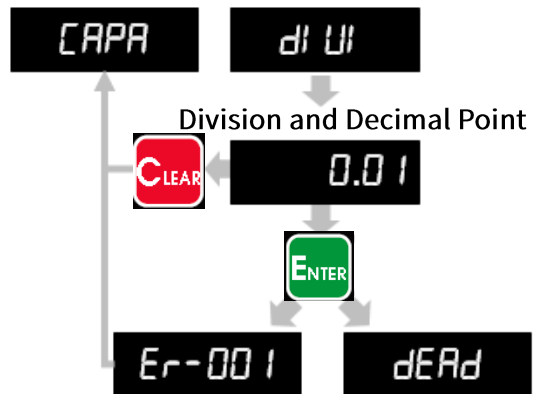






Step 3. Set Maximum Capacity



Ex : When you want to set 20.00kg (division 0.01kg) for capacity, input 20.

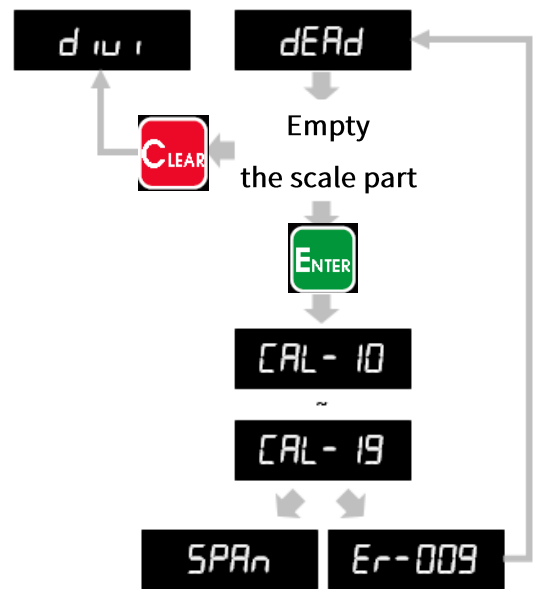
Step 4. Set Decimal Point and Division





-  : Move Decimal point
-  : Increase Division
-  : Save and Move to next step
-  : Cancel and Back to previous step

- ※ You can set the decimal point to 3 places (0, 0.0, 0.00, 0.000) and division can be set as 1, 2, 5, 10, 20, 50.
- ※ The value of (Max capacity/Division) should not be over 20,000.
- ※ If the value of (Max capacity/Division) is over 20,000, “Er-001” will show up and you have to start from “Step 3. Set Maximum Capacity” again.

Step 5. Measure Dead Weight



-  : Save and Move to next step
-  : Cancel and Back to previous step

- ※ If “Er-009” shows up, check if there is anything on the scale part or vibration which interrupt calculation of the indicator.

5-2. Simulation Calibration

You can proceed with Simulation Calibration when you do not have any balance weight. It is the way to calculate and adjust weight via Max capacity of load cell and Rated Output Value. The guaranteed accuracy of simulation calibration is 1/3,000 and it can differ from the accuracy of Rated Output Value of load cell.

Step 1. Enter Simulation Calibration Mode

Press CAL Key






<CAL key position>

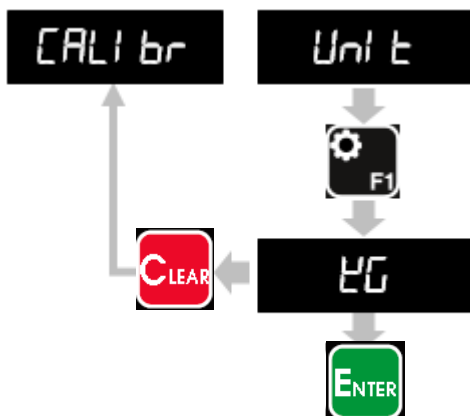





Remove "CAL-BOLT" on the Rear panel and press "CAL key" inside.

<Key Explanation>

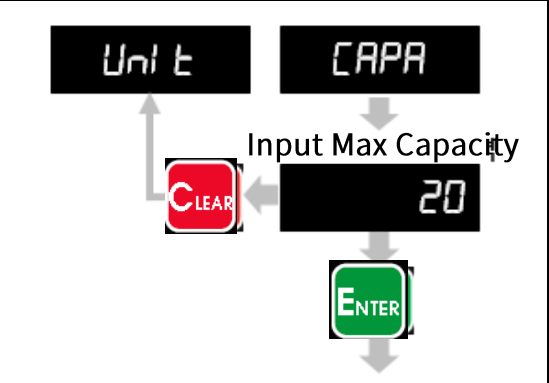


-  : Select Calibration Mode
-  : Save and Move to next step
-  : Cancel and Back to previous step
-

Step 2. Set Unit

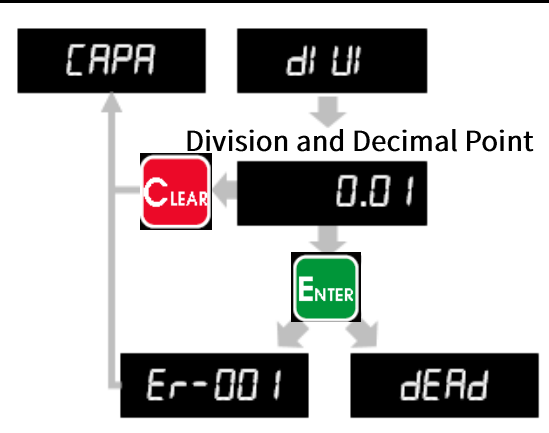






-  : Select Unit
-  : Save and Move to next step
-  : Cancel and Back to previous step

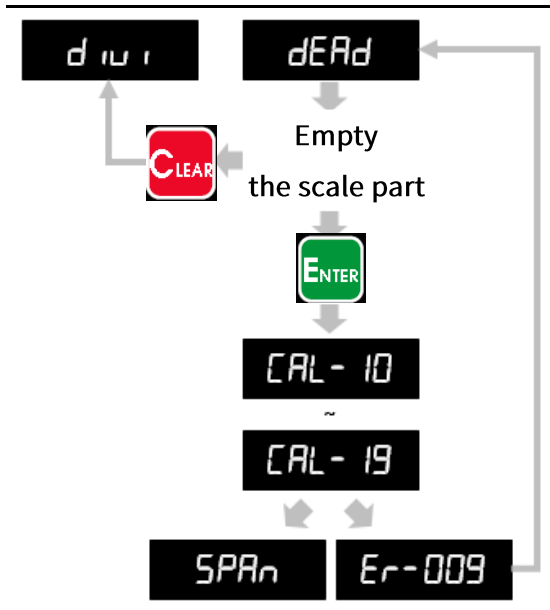
Step 3. Set Maximum Capacity



	<ul style="list-style-type: none"> - Number Key : Input Maximum Capacity -  : Save and Move to next step -  : Cancel and Back to previous step
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;"> <p>MODEL: xxxxx</p> <p>CAPA: 20kg</p> <p>R.O: 1.429mV/V</p> <p>S/N : xxxxxxxx</p> </div> <p><Load Cell Label Explanation ></p> <ul style="list-style-type: none"> ※ Capacity in Simulation Calibration means the capacity written on load cell label. ※ Input the capacity of load cell multiplied by the number of load cell. (number of load cell * capacity of load cell) 	

Step 4. Set Decimal Point and Division

	<ul style="list-style-type: none"> -  : Move Decimal point -  : Increase Division -  : Save and Move to next step -  : Cancel and Back to previous step
<ul style="list-style-type: none"> ※ You can set the decimal point to 3 places (0, 0.0, 0.00, 0.000) and division can be set as 1, 2, 5, 10, 20, 50. ※ The value of (Max capacity/Division) should not be over 20,000. If the value of (Max capacity/Division) is over 20,000, “Er-001” will show up and you have to start from “Step 3. Set Maximum Capacity” again. 	

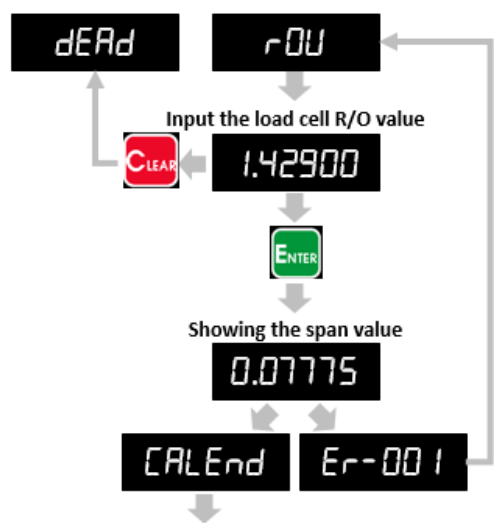
Step 5. Measure Dead Weight





-  : Save and Move to next step
-  : Cancel and Back to previous step

※ If “Er-009” shows up, check if there is anything on the scale part or vibration which interrupt calculation of the indicator.

Step 6. Set R.O.V (Rated Output Voltage/mV)



- Number: Input the balance weight
-  : Save and Move to next step
-  : Cancel and Back to previous step

MODEL: xxxxx
 CAPA: 20kg
R.O: 1.429mV/V
 S/N : xxxxxxxx

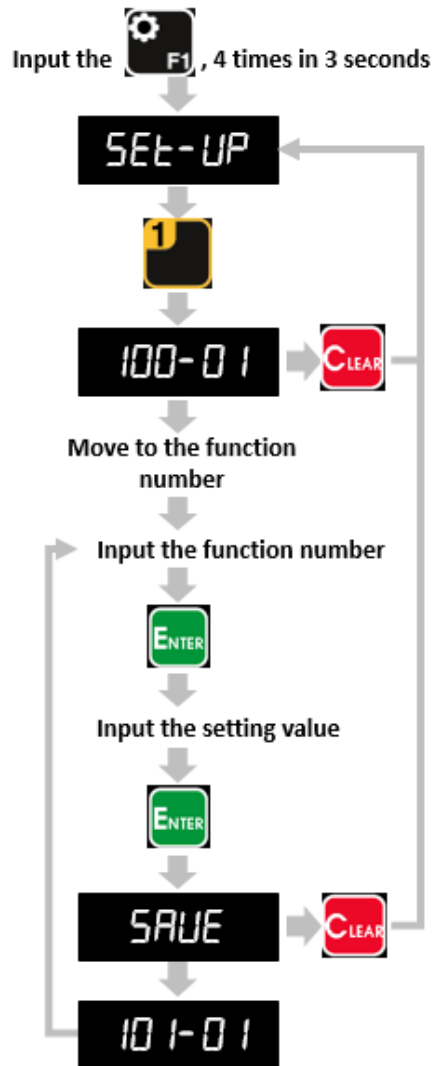
<Load Cell Label Explanation >

※ “Er-001” means you input wrong value. In this case, you need to check load cell label again.

5-3. Function Mode

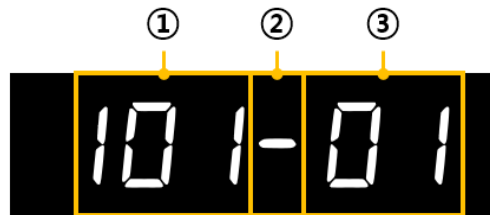
Function Setting makes indicator operate perfectly with surrounding condition.

5-3-1. How to enter Function mode



- : Change the cursor
- : Move the cursor to Function Number
- : Move to Function number input and save Setting value
- : Cancel or Back to previous step

※ Display Explanation



- ① Function Number
- ② : Increase Function Number
- ③ Setting Value

5-3-2. Function List

No.	Subject	Default	Content
Function number 100~119 : Indicator system setting			
100	ID Number	01	01~99 ID number
101	Weight Back-up Mode	01	00 : Normal Mode 01 : Zero/Tare Back-Up Mode 02 : Zero Back-Up Mode
102	Weighing Data Saving method	03	00 : Manual (When Print key is input) 01 : Auto (At every steady state) 02 : Auto (At the first steady state) 03 : Auto (After weighing is finished) 04 : Manual or Auto (at every steady state) 05 : Manual or Auto (At the first steady state) 06 : Manual or Auto (After weighing is finished)
104	Display Update Speed	09	01 : 1 time/seconds 06 : 15 time/seconds 02 : 2 time/seconds 07 : 20 time/seconds 03 : 3 time/seconds 08 : 30 time/seconds 04 : 6 time/seconds 09 : 60 time/seconds 05 : 10 time/seconds
106	Under UNPASS/OVERLOAD state, weight display	00	00 : Display 01 : No display
107	Minus (-) mark display	00	00 : Use 01 : No display
108	Buzzer sound (External input detection)	00	00 : Buzzer sound 01 : No Buzzer sound
109	Key input delay time	03	01 ~ 50 (Unit : 0.01 sec)
110	External input delay time	10	01 ~ 99 (Unit : 0.01 sec)
111	Key Lock	00	00 : disable 01 : enable

No.	Subject	Default	Content
Function number 120~129 : Print Function			
120	Print Language	00	00 : Korean 01 : English
121	Print Format Setting	00	00 : continuous 01 : single
122	Paper withdraw rate (continuous / single)	00	00 ~ 09 (unit : 1line)
123	Paper withdraw rate (total/ sub-total)	00	00 ~ 09 (unit : 1line)
124	Delete contents after printing sub-total	00	00 : delete 01 : disable
125	Delete contents after printing total	00	00 : delete 01 : disable
Function no. 130~139 : Basic Function Setting for Indicator Weighing System			
130	Steady Range	08	01 ~ 99 (unit : 1 = 0.25 division)
131	Delay to judge Steady state	10	01 ~ 99 (unit : 1 = 0.1 sec)
132	Digital Filter	25	01(weak vibration) ~ 50(strong vibration)
133	Auto Zero Range	00	01 ~ 99 (unit : 1 = 0.25 division)
134	Zero Key Operation	00	00 : No limit 01 : Active only under steady condition
135	Zero Key Range	02	00 : less than 2% of Max Capacity 01 : less than 5% of Max Capacity 02 : less than 10% of Max Capacity 03 : less than 20% of Max Capacity 04 : less than 50% of Max Capacity 05 : less than 100% of Max Capacity 06 : No limit

No.	Subject	Default	Content	
Function number 140~199 : External Input and Relay Out Setting				
140	Relay Auto / Manual Setting	00	00: Auto	01 : Manual
141	Relay Out 1	01	00 : Disuse	06 : Running
142	Relay Out 2	02	01 : 1-Stage	(BATCH
143	Relay Out 3	03	02 : PRESET	processing)
144	Relay Out 4	04	03 : BIN Finish	07 : Near Zero
145	Relay Out 5	05	04 : BATCH Finish	08: BIN Running
146	Relay Out 6	06	05 : Error	
147	Relay Out 7	07		
148	Relay Standard (A, B contact)	00	00: Auto	01 : Manual
149	Relay Out Standard 1	01	00: A contact	
150	Relay Out Standard 2	02	01: B contact	
151	Relay Out Standard 3	03		
152	Relay Out Standard 4	04		
153	Relay Out Standard 5	05		
154	Relay Out Standard 6	06		
155	Relay Out Standard 7	07		
156	External Input 1 setting	01	00 : Disuse	
157	External Input 2 setting	02	01 : BIN Start	
158	External Input 3 setting	03	02 : BIN Stop	
159	External Input 4 setting	04	03 : BIN Forced Finish	
160	External Input 5 setting	05	04 : BATCH Reset	
161	External Input 6 setting	00	05 : Zero	

No.	Subject	Default	Content
Function no. 200~209 : Basic Serial Interface (RS232C/Current Loop) Setting			
Function no. 210~219 : Option Serial Interface (RS232C/RS422/RS485) Setting			
200	Data bit/Stop bit/ Parity	00	00: Data bit8, Stop bit1, Parity bit Non
210 (Option)			01: Data bit8, Stop bit1, Parity bit Odd
201	Baud Rate	02	02: Data bit8, Stop bit1, Parity bit Even
211 (Option)			03: Data bit7, Stop bit1, Parity bit Non
202	Communication Mode	00	04: Data bit7, Stop bit, Parity bit Even
212 (Option)			05 : 2,400bps 06 : 38,400bps
203	Serial Interface Stream Mode Protocol (F202-00 / F212-00)	00	07 : 57,600bps
213 (Option)			08 : 76,800bps
204	Stream Mode Data Output (F202-00 / F212-00)	00	09 : 115,200bps
214 (Option)			00: Stream mode
205	Command Checksum	00	01: Command mode
215 (Option)			02: Command mode(SI 4500 format)
206	Stream Mode Data Output (F202-00 / F212-00)	00	03: Print mode
207			04: Modbus (RTU)
208	Stream Mode Data Output (F202-00 / F212-00)	00	00 : format1 (18byte)
209			01 : format2 (21byte)
210	Stream Mode Data Output (F202-00 / F212-00)	00	02 : format3 (17byte)
211			03 : format4 (22byte)
212	Stream Mode Data Output (F202-00 / F212-00)	00	00 : continuous
213			01 : 1 time at every steady state
214	Stream Mode Data Output (F202-00 / F212-00)	00	02 : 1 time at the first steady state (over Near Zero)
215			03 : 1 time after weighing finishes
216	Stream Mode Data Output (F202-00 / F212-00)	00	04 : Input Print key or using external device
217			00 : Disuse
218	Stream Mode Data Output (F202-00 / F212-00)	00	01 : Use
219			

No.	Subject	Default	Content
Function number 250~259 : Option Ethernet Interface Setting			
252	Ethernet Interface Communication Mode	03	00: Stream mode 01: Command mode 02: Command mode(SI 4500 format) 03: Modbus TCP/IP
253	Ethernet Interface Stream Mode Protocol (F252-00)	00	00 : format1 (18byte) 01 : format2 (22byte) 02 : format3 (17byte) 03 : format4 (22byte)
254	Ethernet Interface Stream Mode Data Output (F252-00)	00	00 : continuous 01 : 1 time at every steady state 02 : 1 time at the first steady state (over Near Zero) 03 : 1 time after weighing is finished 04 : Input Print key or using external device
255	Ethernet "Check-Sum" under command mode	00	00 : Disuse 01 : Use

※ Remark: Set F250-00 for BCD OUT option

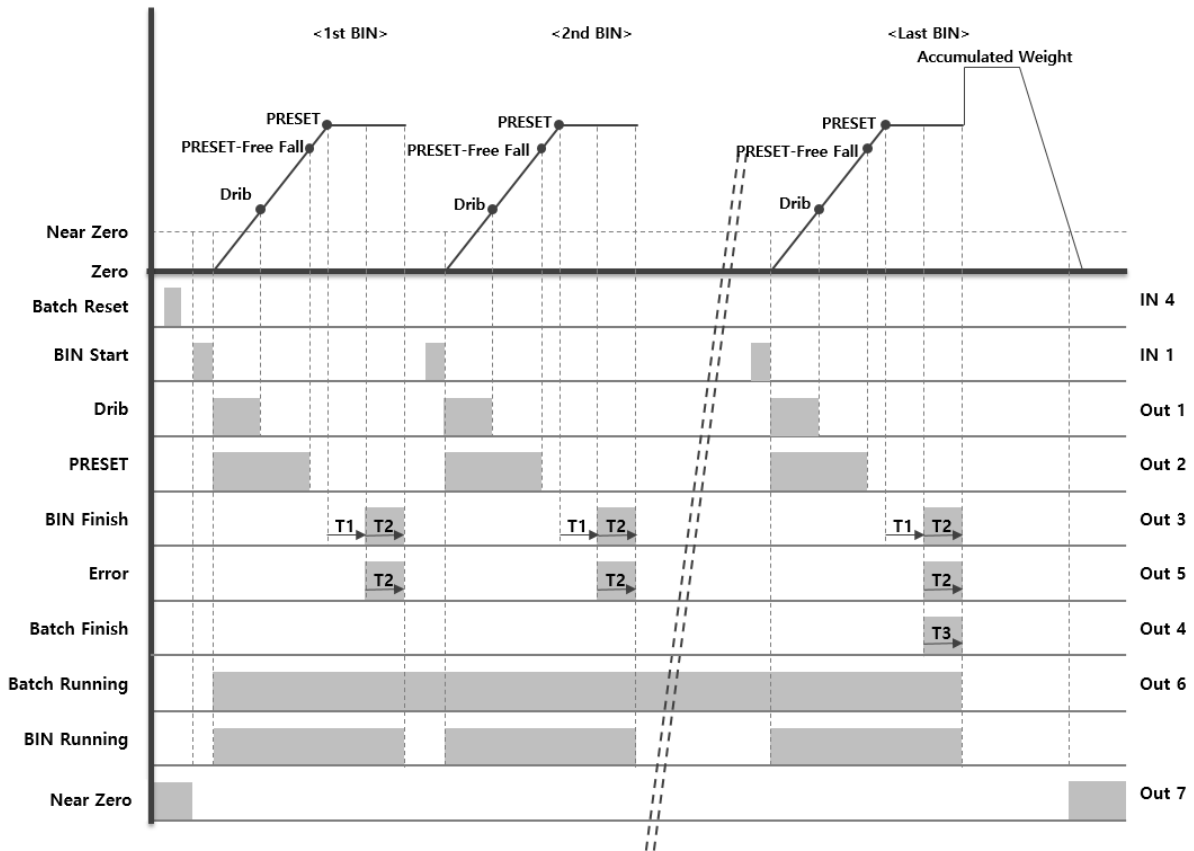
※ Unable to use Ethernet and BCD OUT simultaneously.

Function number 300~309 : Option Analog Output Interface Setting			
300	Analog Output Direction	00	00 : Forward (4~20mA, 0→10V) 01 : Reverse (20~4mA, 10→0V)
301	Analog Max Output Range	00	00 : Absolute value (regardless of mark "-" or "+") 01 : Positive value (Output when current weight is "+")

No.	Subject	Default	Content
302	Analog Max Output (Iout=20mA, Vout=10V) Standard	00	00 : Max capacity 01 : PRESET 02 : Bulk 03 : Drib 04 : Free Fall 05 : Max capacity (Gross value under Tare state)
Function number 310~319 : Option BCD IN/OUT Interface (Part Number Input)			
310	Formula Input (External BIN Number Input)	00	00: Disuse 01: Unit digit(4bit) and Tenth digit(4bit) 02: Input value by binary (8bit) 03: Absolute value (IN1=1~IN8=8)
311	BIN OUT (BIN Number Output)	00	00 : BCD method (Basic) 01 : 1 : 1 method
Function number 330~339 : Option Data storage Device (SD memory card)			
330	SD Memory Card	00	00 : disable 01 : enable ("Sd-err" displays if SD card is not inserted)
331	SD Auto Data Save	01	00 : disable 01 : enable
Function number 501~599 : Indicator weighing process			
500	The Number of BIN	20	01~20
501	Near Zero Relay Output Delay Time	00	00 : Near Zero 01 : Zero
502	BIN Finish Relay Output Delay Time	10	00 ~ 99(Unit : 0.1second) 00: at every steady state
503	BIN Finish Output Time	10	01 ~ 99(Unit : 0.1second)
504	Batch Finish Relay Output Time	10	01 ~ 99(Unit : 0.1second)
505	Auto Batch Reset for power ON	00	00 : disable 01 : enable

No.	Subject	Default	Content
506	Auto Batch Reset when Batch finishes	00	00 : disable 01 : enable
507	Drib Control Method	00	00: Drib 01: PRESET – Drib
530	Tare Setting Method	00	00 : Tare key 01 : Input with number keys
531	Tare Operation limit	00	00 : No limit 01 : Active only under steady condition
532	Tare Operation range	02	00 : less than 10% of Max Capacity 01 : less than 20% of Max Capacity 02 : less than 50% of Max Capacity 03 : less than 100% of Max Capacity
533	Tare Operation Delay Time	00	00 : disable 01 ~ 10 : enable (Unit : 1 sec)
534	Auto Zero After Tare Key Input	00	00 : disable 01 : enable
535	Zero Lamp During Tare State	00	00 : ON when displayed weight is zero 01 : ON when gross weight excluding tare weight
536	Auto tare for “RUN”	00	00 : disable 01 : enable
537	Auto Tare Reset	00	00 : disable (Manual reset) 01 : Auto Reset under Near Zero range 02 : Auto Reset under Steady state
538	Auto Tare Reset Delay Time	00	00 : disable (right after Key or External input) 00 ~ 09 : enable (Unit : 1 second)
550	PRESET Setting Method	00	00: Setting for each Formula 01: Setting for every Formula
552	Output Data Setting for Stream Mode (F202-00 / F212-00)	00	00: Current Weight 01: Accumulated Weight of current Batch

◆ Weighing Mode



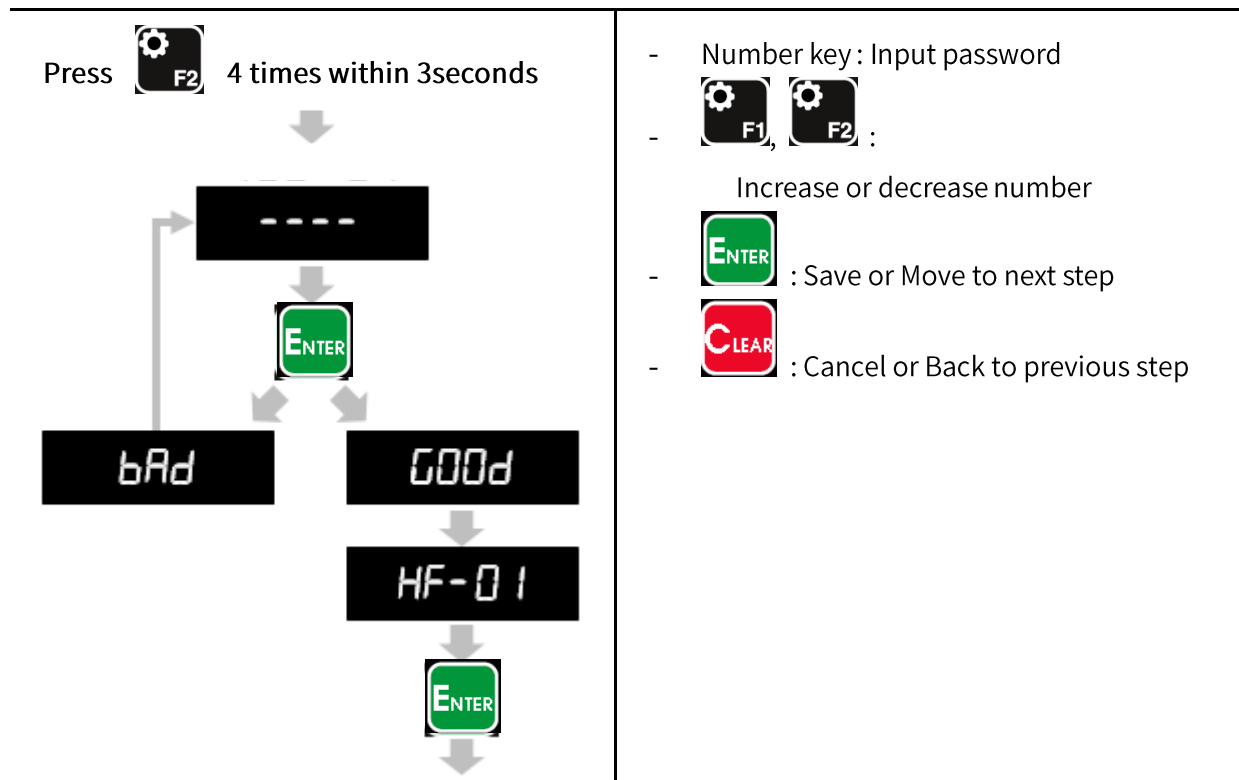
T1	BIN Finish Relay Output Delay Time (F502)	T2	BIN Finish Output Time (F503)
T3	Batch Finish Relay Output Time (F504)		

※ Relay Out can be set on F141~147

※ External Input can be set on F156~161



5-3-3. Hidden Function Mode

※ How to enter Hidden Function Mode



No.	Subject	Default	Remarks
HF01	Serial Number	xxxxx	Factory release number
HF02	Software Version	Ver 3.05	
HF03	Model	SI510	
HF04	Date	YY.MM.DD	Able to set using keys
HF05	Time	HH.MM.SS	Able to set using keys
HF06	Password Setting - Password setting for Hidden Function Mode (4 digits) - Input password twice to check	----	Able to set using keys

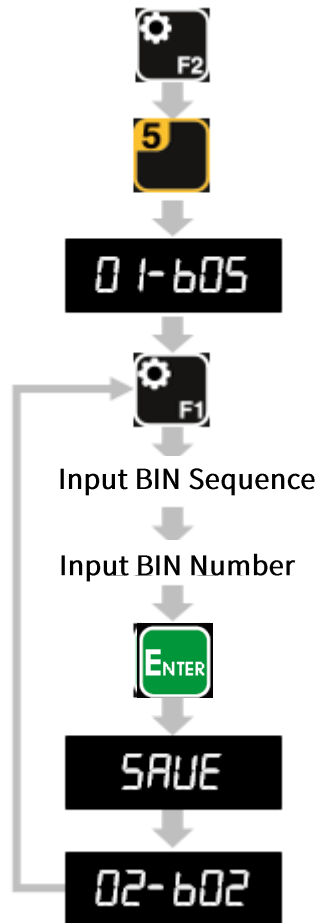
No.	Subject	Default	Remarks
HF07	Function Reset	FUNSET	for "YES"-> Press to proceed with reset. for "NO"-> Press to cancel reset.
HF08	Factory Reset	ALLSET	
HF10	Max Capacity	15.000	Change after calibration
HF11	Span Constant	x.xxxxx	
HF12	Near Zero Range	0.000	Able to set using keys
HF13	Use Simulation Calibration	00	00 : disuse 01 : use
HF14	Span Value Input	OrnU	Input Span Value with Calibrator
HF15	Simulation Calibration Constant Value	x.xxxxx	
Option Analog Output Interface Setting (HF20-HF22)			
HF20	Analog Output Setting	00	00 : Iout(4-20mA) 01 : Vout(0-10V)
HF21	Minimum Analog Output Adjustment (Current/Voltage)	0.00	Input \pm gap value (F1 for minus mark '-')
HF22	Maximum Analog Output Adjustment (Current/Voltage)	0.00	




No.	Subject	Default	Remarks
Option Ethernet Interface Setting (HF30~HF49)			
HF30 ~ HF33	IP ADDRESS (1~4)	192.168.0.101	Able to set using keys and press  key to set it.
HF34 ~ HF37	GateWay (1~4)	192.168.0.1	
HF38 ~ HF41	SubNet mask (1~4)	255.255.255.0	
HF42	Port Number	5000	
HF43 ~ HF46	SERVER IP ADDRESS 1 ~ 4	192.168.0.100	
HF47	<p>Communication</p> <p>0 : Server mode</p> <ul style="list-style-type: none"> - Stream mode (F252-00) - Command mode (F252-01) <p style="padding-left: 20px;">Sending the data to IP</p> <p>1 : Client mode</p> <p>Transmit the data to IP that setting on HF43~46 or HF42 Port</p>	0	Able to set using keys and press  key to set it.

5-4. BIN Weighing Sequence Setting

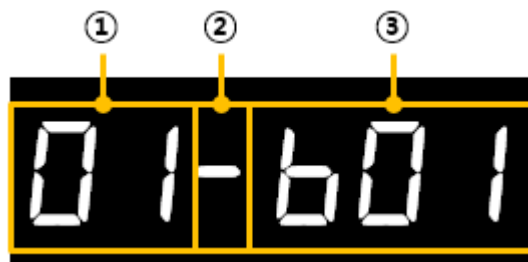
5-4-1. How to Enter BIN Weighing Sequence Setting Mode


- You can set the order within the range of F500, The number of BIN.
- In spite of BIN Sequence, weighing mode proceeds with next BIN if PRESET of the BIN is "0"
- Re-start from 1st BIN of Weighing Sequence after BATCH reset.



-  F1: Move cursor
-  ENTER: Save and move to next step
-  CLEAR: Cancel and move to previous step

※ Display Explanation


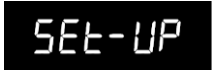












- ① BIN Sequence
- ②  ENTER: Increase Number
- ③ Bin Number


5-5. Test mode






Disconnect all of the devices from the indicator before you proceed with test.

How to enter Test Mode	<p>1) Press  4 times for 3 seconds.</p> <p>2) When  displays, press .</p> <p>3) When  displays,</p> <p>4) You can select test various modes as below. .</p>			
	Key	Test	Key	Test
		Load Cell Input Value Check Mode		External Input Check Mode
		Load cell Input Value Fluctuation Check Mode		Relay Out Check Mode
		Keypad Check Mode		Analog Output 4~20mA, 0~10V Check Mode
		Display Check Mode		
	<p>5)  to cancel or move to previous step.</p>			

5-5-1. Load Cell Input Value Check Mode




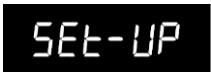
- 1) Press  on the test mode to check value .
 - ※ This mode is to check analog input value converted to digital value. It is normal symptom that the last digit changes.
(-1,048,575~1,048,575 can be displayed)
 - ※ If the value is fluctuating though there is nothing on the scale part or if there is no difference when you load something on the scale part, these may be because of broken load cell, cable connection error, or broken A/D converter of indicator.
















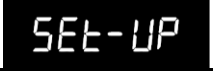
5-5-2. Load Cell Input Value Fluctuation Check Mode

- 1) Press  on the test mode.
- 2) Press  to display . In this condition, the weight loaded on the scale part converted to digital value so you can check the deviation of change of weight.



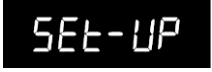
5-5-3. Keypad Check Mode

You can check key operation on display.



- 1) Press  on the test mode, then  displays.
- 2) When you push a key except for , relevant numbers will show up on display.
- 3) Press  key to back to .

KEY	DISPLAY	KEY	DISPLAY	KEY	DISPLAY
	1		6		10
	2		7		11
	3		8		12
	4		9		13
	5		0		Back to 


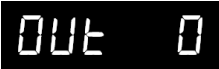
5-5-4. Display Check Mode








- 1) Press  on the test mode to check display condition.
 - 2) You can check display condition.
 - 3) Press  to back to .
-

5-5-5. External Input Check Mode



- 1) Press  on the test mode, then  displays.
 - 2) Wire External Input terminal and Input common Terminal (IC) to check External Input number on display. .
-

5-5-6. Relay Out Check Mode

- 1) Press  on the test mode for  display.
- 2) You can check selected relay output.
 - ※ Disconnect all of the devices from indicator before you proceed with tests.

						
OUT1 ON/OFF	OUT2 ON/OFF	OUT3 ON/OFF	OUT4 ON/OFF	OUT5 ON/OFF	OUT6 ON/OFF	OUT7 ON/OFF

5-5-7. Analog Output 4~20mA, 0~10V Check Mode

- 1) Press  on the test menu, then  will display.
- 2) You can proceed with simulation With indicator outputting virtual analog output from In00.000(0mA, 0V) to 23.000(23mA, 10V).
- 3) A means Analog output 4 ~ 20mA, V means 0 ~ 10V.

※ You can check analog output by 0.1 unit with arrow keys.

If input value is over the maximum, real output will be 100%.

EX) If the mode is 4~20mA and you input **4.000**, the real output will be **4mA**.

If the mode is 4~20mA and you input **20.000**, the real output will be **20mA**.

If the mode is 0~10V and you input **4.700**, the real output will be **4.7V**.

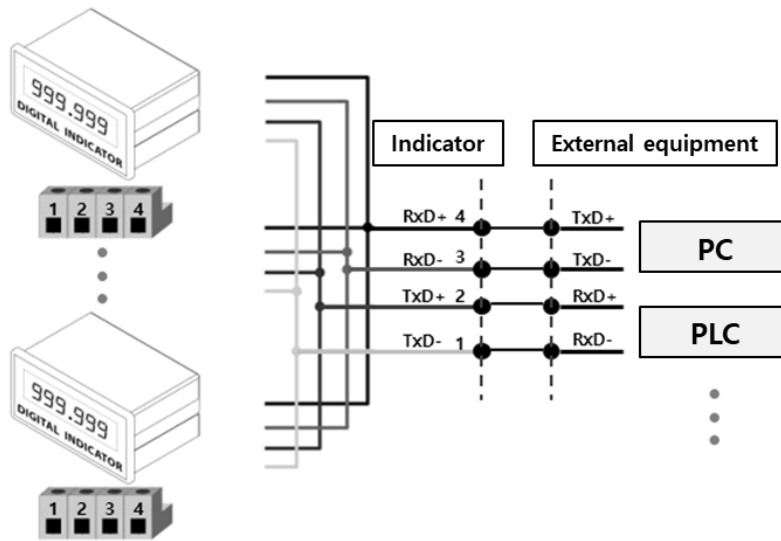
If the mode is 0~10V and you input **10.000**, the real output will be **10V**.

6. Option card

6-1. Serial interface

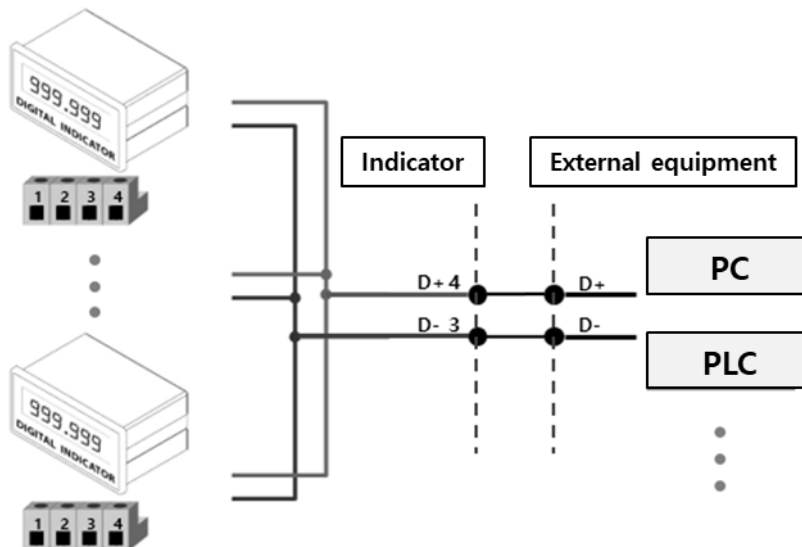
6-1-1. Serial interface OP-01 : RS422

RS422 Interface is available for long-distance communication (within 1km) since it is strong against electric noise. You can connect up to 32EA of devices like PC, PLC, Printer through Multi-Drop Method.



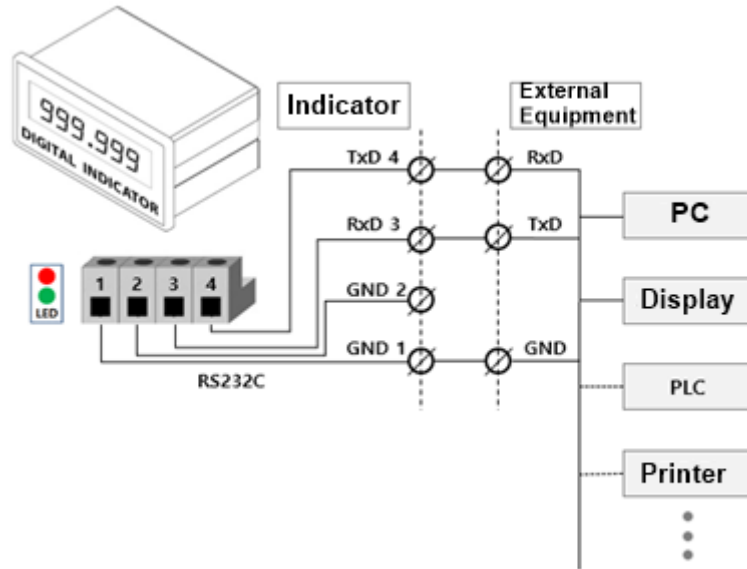
6-1-2. Serial interface OP-02 : RS485

RS485 Interface is available for long-distance communication (within 1km) since it is strong against electric noise. Although this Interface is slow compared to RS422, but you can connect up to 32EA of devices like PC, PLC, Printer through Multi-Drop Method.



6-1-3. Serial interface OP-03 : RS232C

RS232C Interface is adequate for short distance communication like PC, PLC, printer, external display and etc since it is weak in electric noise.



Since Serial Interface is vulnerable to electric noise, Use twisted shielded cable to minimize communication disruption.

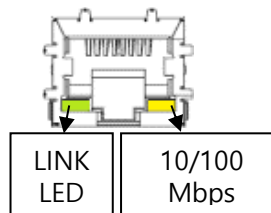
6-2. Ethernet Interface

6-2-1. Ethernet Interface : OP-04

Connect Indicator to External Devices like PC through Ethernet Interface.

(Baud rate: 10/100Mbps)

- Function 252-00 (Stream mode)
- Function 252-01 (Command mode)
- Function 252-03 (Modbus TCP/IP)

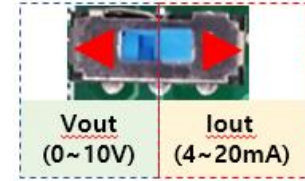


6-3. Analog output

※ How to select Analog Output (Iout or Vout)

Switch Iout or Vout through a deep switch installed inside of Indicators or option cards.

Select Analog Output option on HF13 and save the setting value.



6-3-1. Analog Current Output (4~20mA) : OP-05

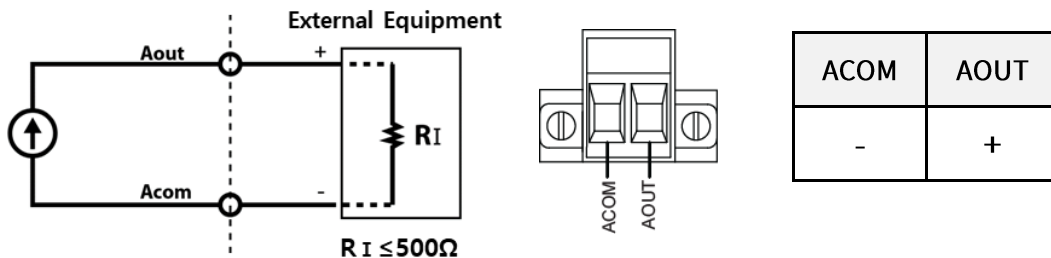
Analog Output Interface 4~20mA transmit displayed weight data to the external devices like PC, recorder, PLC, external display, etc through current output.

Current Output	Accuracy	Temperature Coefficient	Max Load Impedance
4mA ~ 20mA	1/1,000	0.01%/°C	500Ω MAX.



- Analog Output does not work during calibration or Ad-Err.
- If it stop working, the last value maintains.
- It is not adequate for the system which demands high-accuracy over 1/1,000.

1) Circuit Composition and Connection



Analog Current Output Interface transmit analog current(4~20mA) commensurate with the displayed weight

2) Analog Current Output Adjustment (HF20-00)

- ① Default is : 4mA output for Zero, 20mA output for Max Capacity.
- ② If there is a gap in value caused by distance or environment, the way to adjust is as following ③.
- ③ How to adjust Analog Output
 - When the weight is zero but output is not 4mA, You can adjust the gap on HF21.
 - When the weight is Max Capacity but output is not 20mA, You can adjust the gap on HF22.

6-3-2. Analog Voltage Output (0~10V)

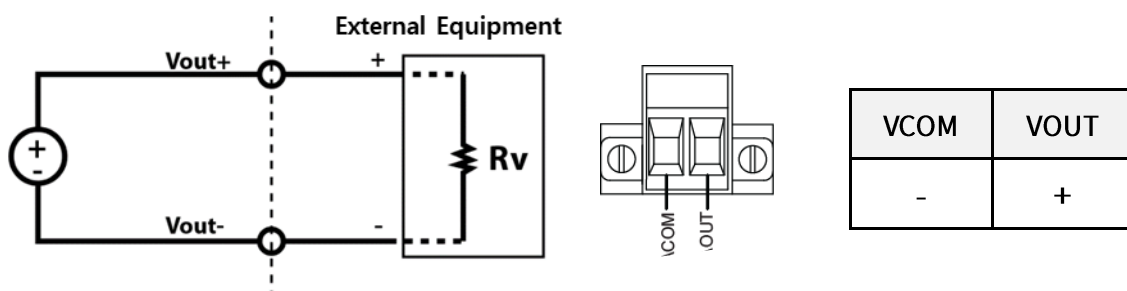
Analog Output Interface 0~10V transmit displayed weight data to the external devices like PC, recorder, PLC, external display, etc through voltage output.

Output voltage	0~10VDC output
Accuracy	1/1,000



- Analog Output does not work during calibration or Ad-Err.
- If it stop working, the last value maintains.
- It in not adequate for the system which demands high-accuracy over 1/1,000.

1) Circuit Composition and Connection



Analog Voltage Output Interface transmit analog voltage(0~10V) commensurate with the displayed weight

2) Analog Voltage Output Adjustment (HF20-01)

- ① Default is : 0V output for Zero, 10V output for Max Capacity.
- ② If there is a gap in value caused by distance or environment, the way to adjust is as following ③.
- ③ How to adjust Analog Output
 - When the weight is zero but output is not 0V, You can adjust the gap on HF21
 - When the weight is Max Capacity but output is not 10V, You can adjust the gap on HF22

※ How to select Analog Output (Iout or Vout)

- (1) Switch Iout or Vout through a deep switch installed on option cards.
- (2) Select Analog Output option on HF20 and save the setting value.

6-4. Parallel interface

6-4-1. BIN IN/OUT (Part Number External Input card) : OP-07

BIN IN/OUT Interface is to enter part number of indicator from external equipment such as PC.

1) Connector Pin

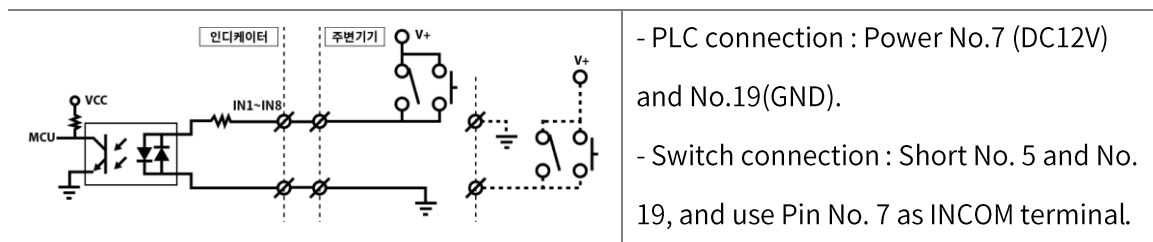
Pin no.	Contents	Pin no.	Contents
1	IN 1	14	IN 2
2	IN 3	15	IN 4
3	IN 5	16	IN 6
4	IN 7	17	IN 8
5	IN COM	18	
6		19	GND
7	DC12V 50mA	20	
8		21	
9	OUTCOM	22	OUT 1
10	OUT 2	23	OUT 3
11	OUT 4	24	OUT 5
12	OUT 6	25	OUT 7
13	OUT 8		

※ Formula IN changes Formula number according to F310 setting

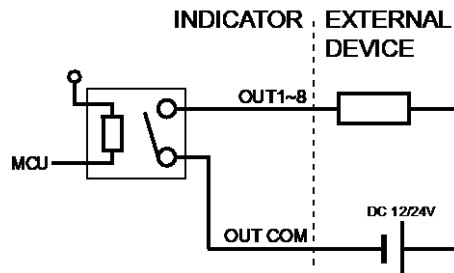
※ BIN OUT outputs BIN number according to F311 setting

2) Connector Specification : D-type 25p(Female)

3) Formula IN Input signal has to be connected as open collector output and dry contact output



4) BIN OUT



6-4-2. BCD OUT interface : OP-08

BCD OUT parallel interface is output current weight as BCD code. This interface can be connected with PC, PL, external display or ETC.

1) Connector pin

Pin No.	Contents	Pin No	Contents
1	GND	19	1x10 ⁰
2	2x10 ⁰	20	4x10 ⁰
3	8x10 ⁰	21	1x10 ⁰
4	2x10 ¹	22	4x10 ⁰
5	8x10 ¹	23	1x10 ⁰
6	2x10 ²	24	4x10 ⁰
7	8x10 ²	25	1x10 ⁰
8	2x10 ³	26	4x10 ⁰
9	8x10 ³	27	1x10 ⁰
10	2x10 ⁴	28	4x10 ⁰
11	8x10 ⁴	29	1x10 ⁰
12	2x10 ⁵	30	4x10 ⁰
13	8x10 ⁵	31	NET/GROSS
14	GND	32	GND
15	Hold	33	Division 0.000
16	Division 0.00	34	Division 0.0
17	Polarity	35	BUSY
18	-	36	O.L

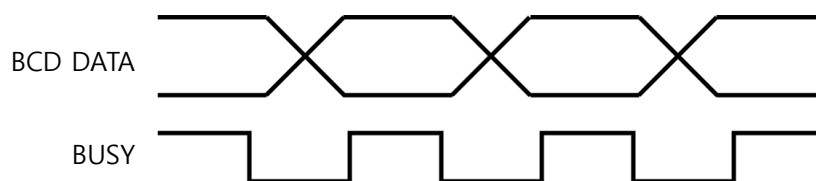
2) Connector specification : Champ 36(FEMALE)

3) BCD OUT output specification : Open-collector output

4) Hold Input has to be connected as open collector output and dry contact output. When

Hold is input, BCD-OUT value will be hold.

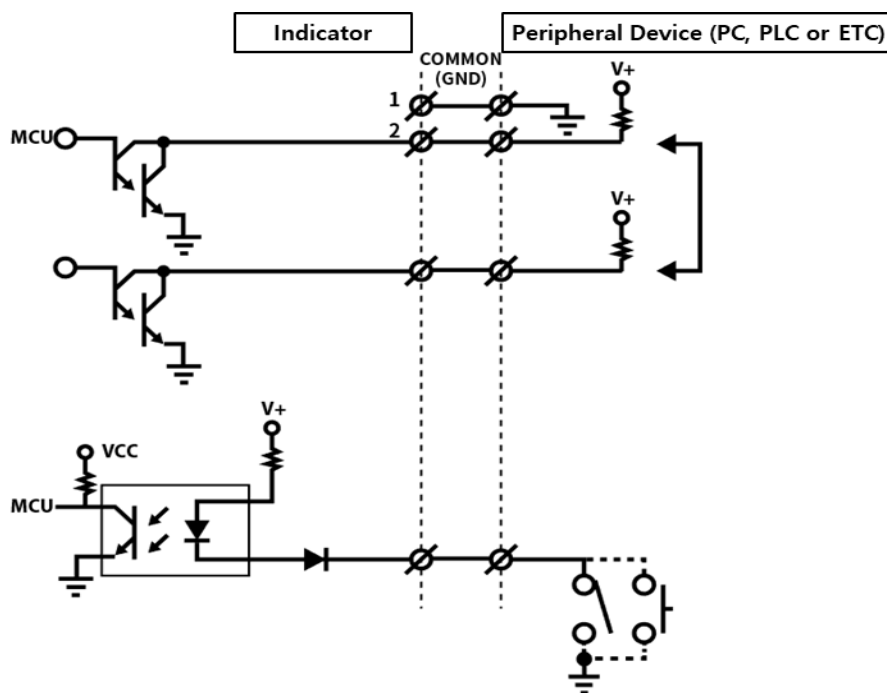
5) BCD out time chart



6) Signal logic

	Factory default	Contents	Remark
BDC data	Positive	Positive Negative	Select by the switch on the BCD OUT PCB.
Polarity	When it is “-“, “H” is output	When “-“ is output, open ”H” will be output.	
O.L output	When it is “OL”, “H” is output.	When it is Over-load, open “H” will be output.	
Busy	When it is “Busy”, “H” is output.	If converting of BCD OUT value is completed, “busy” signal is keeping as H. Then it is changed to “L” before starting BCD converting.	
Hold	When it is BCD data “hold”, “L” is output.	If you want BCD data to be “hold”, input signal will be input. (Contact close)	

7) If you want BCD out card as TTL level or voltage source output, please contact to SEWHA CNM Co., Ltd. (Customized product)



6-5. Data Storage Device (SD memory card)

6-5-1. Data Storage Device (SD memory card) : OP-09

Data storage device saves the weight data according to F102 setting.



SD memory card has to be installed in Option 2 location.

1) Weighing Data Format (File name: N + Creation date)(ex : N160114)

Save data on SD memory card according to F102 setting.

DATE	TIME	ID	PART	SERIAL	DRIB	BURK	FREE FALL	TARGET
2016-01-01	12:18:04	1	1	1	10	10	10	10
2016-01-01	12:18:10	1	1	2	10	11	12	10
2016-01-01	12:18:10	1	1	3	12	15	13	15

2) Sub-total weighing data format (File name: S + Creation date)(ex : S160114)

Save Sub-total weight data on SD memory card when input "Print Sub-total"

DATE	TIME	ID	PART	SUB TOTAL COUNT	SUB TOTAL WEIGHT	UNIT
2016-01-01	12:00:30	1	1	10	6000	kg
2016-01-01	12:00:30	1	2	10	5000	kg

3) Sub-total1 weighing data format (File name: SA + Creation date)(ex : S160114)

When input Print Sub-total, save sub-total weight on SD memory card.

DATE	TIME	ID	PART	A_SUB COUNT	DRIB	BURK	FREE FALL	TARGET	A_SUB WEIGHT	UNIT
2016-01-01	12:00:30	1	1	10	11	12	13	14	6000	kg
2016-01-01	12:00:30	1	2	10	18	17	16	15	5000	kg

4) Total weighing data format (File name: T + Creation date)(ex : T160114)

DATE	TIME	TOTAL COUNT	TOTAL WEIGHT	UNIT				
2016-01-01	12:27:30	17	4620	kg				
ID	PART	SUB COUNT	DRIB	BURK	FREE FALL	TARGET	SUB WEIGHT	UNIT
1	1	5	1207	2	1	1	1207	kg
1	2	8	2383	3	5	2	2383	kg
1	3	2	506	4	5	4	506	kg
1	4	2	524	5	7	1	524	kg

5) SD Memory Specification

Memory	Model	Form factor	Class
8G	SanDisk SDHC memory card 8G	SDHC	4



- Recommend you to use the specified SD memory card.
- Back up the files and format the SD memory regularly since USB Memory has capacity.
- Right-click on the removable disk drive, run the format, select FAT32 in the file system, and press Start.

6-6. Option card combination

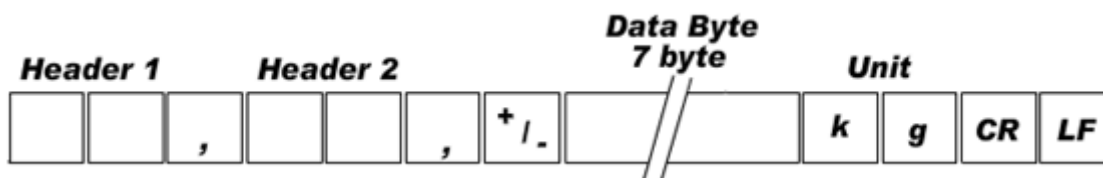
Maximum 2EA of option card can be installed. Below combination is available.

Classification	OP-01	OP-02 OP-03	OP-04	OP-05 OP-06	OP-07	OP-08	OP-09
	Serial (RS232)	Serial (RS422, RS485)	Ether- net	Analog out	BCD IN	BCD OUT	SD memory card
Serial RS232	X	X	0	0	0	0	0
Serial RS422, RS485	X	X	0	0	0	0	0
Ethernet	0	0	X	0	0	X	0
Analog out	0	0	0	X	0	0	0
BCD IN	0	0	0	0	X	0	0
BCD OUT	0	0	X	0	0	X	0
SD memory card	0	0	0	0	0	0	X

7. Communication Data Format

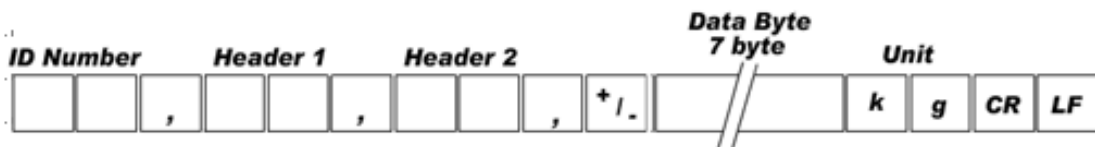
7-1. Stream Mode

7-1-1 Format 1 (excluding ID number) – 18 byte



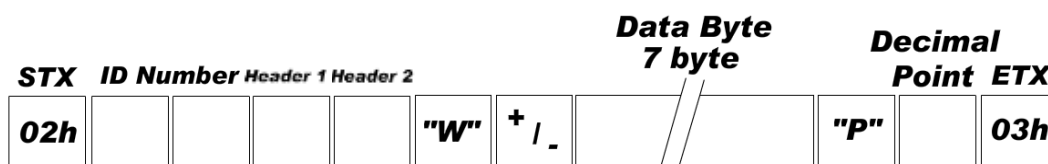
Classification	Contents						
Header1 (2Byte)	OL : Overloaded ST : Stable US : Unstable						
Header2 (2Byte)	NT : NET-WEIGHT GS : GROSS-WEIGHT						
Sign (1Byte)	Mark						
Weight Data (7Byte)	Current weight						
UNIT (2Byte)	kg - <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>k</td><td>g</td></tr></table> g - <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td>g</td></tr></table> ton - <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td>t</td></tr></table>	k	g		g		t
k	g						
	g						
	t						
CR (1byte)	Carriage Return						
LF (1byte)	Line Feed						
Example	ASCII : ST,NT,+0000.00kg CR LF HEX : 53h 54h 2Ch 4Eh 54h 2Ch 2Bh 30h 30h 30h 30h 2Eh 30h 30h 6Bh 67h 0Dh 0Ah						

7-1-2. Format 2 (including ID number) – 21 byte



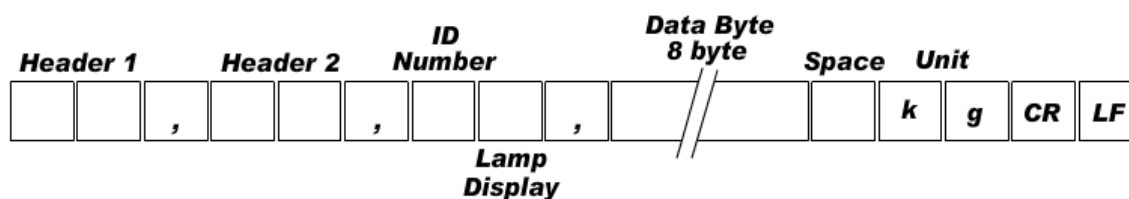
Classification	Contents						
ID Number (2Byte)	ID number						
Header1 (2Byte)	OL : Overloaded ST : Stable US : Unstable						
Header2 (2Byte)	NT : NET-WEIGHT GS : GROSS-WEIGHT						
Sign (1Btye)	Mark						
Weight Data (7Byte)	Sign						
UNIT (2Byte)	kg- <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>k</td><td>g</td></tr></table> g- <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td>g</td></tr></table> ton- <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td>t</td></tr></table>	k	g		g		t
k	g						
	g						
	t						
CR (1byte)	Carriage Return						
LF (1byte)	Line Feed						
Example	ASCII : 01,ST,NT,+0000.00kg CR LF HEX : 30h 31h 2Ch 53h 54h 2Ch 4Eh 54h 2Ch 2Bh 30h 30h 30h 30h 2Eh 30h 30h 6Bh 67h 0Dh 0Ah						

7-1-3. Format 3 (including ID number) – 17 byte



Classification	Contents
STX (1Byte)	Start of Text
ID Number (2Byte)	
Header1 (1Byte)	O : Overloaded S : Stable U : Unstable
Header2 (1Byte)	N : NET-WEIGHT G : GROSS-WEIGHT
"W" (1Byte)	Current weight separator
Sign (1Byte)	Mark
Weight Data (7Byte)	Current weight
"P" (1Byte)	Decimal point separator
Decimal Point (1Byte)	
ETX (1Byte)	End of Text
Example	ASCII : STX 01SNW+0000000P2 ETX HEX : 02h 30h 31h 53h 4Eh 57h 2Bh 30h 30h 30h 30h 30h 30h 30h 50h 32h 03h

7-1-4. Format 4 (including ID number) – 22 byte



Classification	Contents
Header1 (2Byte)	OL : Overloaded ST : Stable US : Unstable
Header2 (2Byte)	NT : NET-WEIGHT GS : GROSS-WEIGHT
ID Number (1Byte)	ID number
Lamp Display (1Byte)	Lamp status display
Weight Data (8Byte)	Current weight including mark (Mark for minus '-' only)
UNIT (2Byte)	kg : kg g : g t : ton
CR (1byte)	Carriage Return
LF (1byte)	Line Feed
Example	ASCII : ST,NT,?.?_0.12 kg CR LF HEX : 53h 54h 2Ch 4Eh 54h 2Ch 01h E1h 2Ch 20h 20h 20h 20h 30h 2Eh 31h 32h 20h 6Bh 67h 0Dh 0Ah

※ Lamp display

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
1	Steady	1	Hold	Print	Gross weight	Tare	Zero

7-2. Command mode

Command judgement judge data 06h (ACK), 15h (NAK) and Error Code which starts with 02h(STX) and ends with 03h(ETX).

7-2-1. Read mode

Current Weight (Displayed Weight)		
Transmit	Format: STX(1) ID(2) RCWT(4) ETX(1) ASCII : STX 01RCWT ETX HEX : 02h 30h 31h 52h 43h 57h 54h 03h	8 Byte
Respond	Format: STX(1) ID(2) RCWT(4) State1(1) State2(1) P(1) Decimal Point(1) Mark(1) Current Weight(6) Unit(2) ETX(1) ASCII : STX 01RCWTSNP2+001234kg ETX HEX : 02h 30h 31h 52h 43h 57h 54h 53h 4Eh 50h 32h 2Bh 30h 30h 31h 32h 33h 34h 6Bh 67h 03h	21 Byte
	State 1: O(Overloaded), S(Stable), U(Unstable) State 2: N(Net Weight), G(Gross)	
Time		
Transmit	Format: STX(1) ID(2) RTIM(4) ETX(1) ASCII : STX 01RTIM ETX HEX : 02h 30h 31h 52h 54h 49h 4Dh 03h	8 Byte
Respond	Format: STX(1) ID(2) RTIM(4) Time(6) ETX(1) ASCII : STX 01RTIM123035 ETX HEX : 02h 30h 31h 52h 54h 49h 4Dh 31h 32h 33h 30h 33h 35h 03h	14 Byte
Date		
Transmit	Format: STX(1) ID(2) RDAT(4) ETX(1) ASCII : STX 01RDAT ETX HEX : 02h 30h 31h 52h 44h 41h 54h 03h	8 Byte
Respond	Format: STX(1) ID(2) RDAT(4) Date(6) ETX(1) ASCII : STX 01RDAT171101 ETX HEX : 02h 30h 31h 52h 44h 41h 54h 31h 37h 31h 31h 30h 31h 03h	14 Byte
BIN Number		
Transmit	Format: STX(1) ID(2) RBIN(4) ETX(1) ASCII : STX 01RBIN ETX HEX : 02h 30h 31h 52h 42h 49h 4Eh 03h	8 Byte
Respond	Format: STX(1) ID(2) RBIN(4) BIN Number(2) ETX(1) ASCII : STX 01BIN01 ETX HEX : 02h 30h 31h 52h 42h 49h 4Eh 30h 31h 03h	10 Byte

Formula Number		
Transmit	Format: STX(1) ID(2) RFML(4) ETX(1) ASCII : STX 01RFML ETX HEX : 02h 30h 31h 52h 46h 4Dh 4Ch 03h	8 Byte
Respond	Format: STX(1) ID(2) RFML(4) Formula Number(2) ETX(1) ASCII : STX 01RFML01 ETX HEX : 02h 30h 31h 52h 46h 4Dh 4Ch 30h 31h 03h	10 Byte
PRESET of Current BIN Number		
Transmit	Format: STX(1) ID(2) RFIN(4) ETX(1) ASCII : STX 01RFIN ETX HEX : 02h 30h 31h 52h 46h 49h 4Eh 03h	8 Byte
Respond	Format: STX(1) ID(2) RFIN(4) P(1) Decimal Point(1) PRESET(6) ETX(1) ASCII : STX 01RFINP2012345 ETX HEX : 02h 30h 31h 52h 46h 49h 4Eh 50h 32h 30h 31h 32h 33h 34h 35h 03h	16 Byte
Drib of Current BIN Number		
Transmit	Format: STX(1) ID(2) RDRI(4) ETX(1) ASCII : STX 01RDRI ETX HEX : 02h 30h 31h 52h 44h 52h 49h 03h	8 Byte
Respond	Format: STX(1) ID(2) RDRI(4) P(1) Decimal Point(1) Drib(6) ETX(1) ASCII : STX 01RDRI P2012345 ETX HEX : 02h 30h 31h 52h 44h 52h 49h 50h 32h 30h 31h 32h 33h 34h 35h 03h	16 Byte
Free Fall of Current BIN Number		
Transmit	Format: STX(1) ID(2) RFRE(4) ETX(1) ASCII : STX 01RFRE ETX HEX : 02h 30h 31h 52h 46h 52h 45h 03h	8 Byte
Respond	Format: STX(1) ID(2) RFRE(4) P(1) Decimal Point(1) Free Fall(6) ETX(1) ASCII : STX 01RFREP2012345 ETX HEX : 02h 30h 31h 52h 46h 52h 45h 50h 32h 30h 31h 32h 33h 34h 35h 03h	16 Byte
Accumulated Weight		
Transmit	Format: STX(1) ID(2) RTTL(4) ETX(1) ASCII : STX 01RTTL ETX HEX : 02h 30h 31h 52h 54h 54h 4Ch 03h	8 Byte
Respond	Format: STX(1) ID(2) RTTL(4) P(1) Decimal Point(1) Accumulated Weight(6) ETX(1) ASCII : STX 01RTTLP2012345 ETX HEX : 02h 30h 31h 52h 54h 54h 4Ch 50h 32h 30h 31h 32h 33h 34h 35h 03h	16 Byte

Current Weight and Finish Weight for Each BIN of Current Formula		
Transmit	Format: STX(1) ID(2) RFTD(4) ETX(1) ASCII : STX 01RFTD ETX HEX : 02h 30h 31h 52h 46h 54h 44h 03h	8 Byte
Respond	Format: STX(1) ID(2) RFTD(4) Formula Number(2) P(1) Decimal Point(1) BIN1 Finish Weight(6) ~ BIN20 Finish Weight(6) Mark(1) Current Weight(6) ETX(1) ASCII : STX 01RFTD01P201234501234501234501234501234501234501234501 2345012345012345012345012345012345012345012345012345012345 0 12345012345012345+012345ETX HEX : 02h 30h 31h 52h 46h 54h 44h 30h 31h 50h 32h 30h 31h 32h 33h 34h 35h 2Bh 30h 31h 32h 33h 34h 35h 03h	139 Byte
Current Weight, External Input, Relay Out		
Transmit	Format: STX(1) ID(2) RWRS(4) ETX(1) ASCII : STX 01RWRS ETX HEX : 02h 30h 31h 52h 57h 52h 53h 03h	8 Byte
Respond	Format: STX(1) ID(2) RWRS(4) P(1) Decimal Point(1) Mark(1) Current Weight(6) External Input(6) Relay Out(7) ETX(1) ASCII : STX 01RWRS P2+012345000000000001 ETX HEX : 02h 30h 31h 52h 57h 52h 53h 50h 32h 2Bh 30h 31h 32h 33h 34h 35h 30h 30h 30h 30h 30h 30h 30h 30h 30h 30h 30h 30h 30h 31h 03h	30 Byte

Formula Number / BIN Finish Weight / Current Weight / Relay Out		
Transmit	Format: STX(1) ID(2) RFT1(4) ETX(1) ASCII : STX 01RFT1 ETX HEX : 02h 30h 31h 52h 46h 54h 31h 03h	8 Byte
Respond	Format: STX(1) ID(2) RFT1(4) Formula Number(2) P(1) Decimal Point(1) BIN1 Finish Weight(6) ~ BIN20 Finish Weight(6) Mark(1) Current Weight(6) Relay Out(7) ETX(1) ASCII : STX 01RFT101P201234501234501234501234501234501234 5012345012345012345012345012345012345012345012345 012345012345012345012345012345012345+0123450000001 ETX HEX : 02h 30h 31h 52h 46h 54h 31h 30h 31h 50h 33h 30h 31h 32h 33h 34h 35h 2Bh 30h 31h 32h 33h 34h 35h 30h 30h 30h 30h 30h 30h 31h 03h	146 Byte

7-2-2. Write mode

-Transmit(normal): STX + ID(2Byte) + ACK + ERROR_CORD (1Byte) + ETX

-Transmit(error): STX + ID(2Byte) + NAK + ERROR_CORD (1Byte) + ETX

Error code	
0 : Normality	1 : Check-Sum Error
2 : Received Data Length Error	3 : Received Data Range Error
4 : Write prohibit error (It is not allowed during run process)	

Zero Setting			
Transmit	Format : STX(1) ID(2) WZER(4) ETX(1) ASCII : STX 01WZER ETX HEX : 02h 30h 31h 57h 5Ah 45h 52h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Tare Setting			
Transmit	Format : STX(1) ID(2) WTAR(4) ETX(1) ASCII : STX 01WTAR ETX HEX : 02h 30h 31h 57h 54h 41h 52h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Tare Reset			
Transmit	Format : STX(1) ID(2) WTRS(4) ETX(1) ASCII : STX 01WTRS ETX HEX : 02h 30h 31h 57h 54h 52h 53h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

Print			
Transmit	Format : STX(1) ID(2) WPRT(4) ETX(1) ASCII : STX 01WPRT ETX HEX : 02h 30h 31h 57h 50h 52h 54h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Print Sub-total			
Transmit	Format : STX(1) ID(2) WSPR(4) ETX(1) ASCII : STX 01WSPR ETX HEX : 02h 30h 31h 57h 53h 50h 52h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Print Total			
Transmit	Format : STX(1) ID(2) WGPR(4) ETX(1) ASCII : STX 01WGPR ETX HEX : 02h 30h 31h 57h 47h 50h 52h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Delete Sub-total			
Transmit	Format : STX(1) ID(2) WSTC(4) ETX(1) ASCII : STX 01WSTC ETX HEX : 02h 30h 31h 57h 53h 54h 43h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

Delete Total			
Transmit	Format : STX(1) ID(2) WGTC(4) ETX(1) ASCII : STX 01WGTC ETX HEX : 02h 30h 31h 57h 47h 54h 43h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Time			
Transmit	Format : STX(1) ID(2) WTIM(4) TIME(6) ETX(1) ASCII : STX 01WTIM123035 ETX HEX : 02h 30h 31h 57h 54h 49h 4Dh 31h 32h 33h 30h 33h 35h 03h		14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Date			
Transmit	Format : STX(1) ID(2) WDAT(4) DATE(6) ETX(1) ASCII : STX 01WDAT171101 ETX HEX : 02h 30h 31h 57h 44h 41h 54h 31h 37h 31h 31h 30h 31h 03h		14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
BATCH RESET			
Transmit	Format : STX(1) ID(2) WBRS(4) ETX(1) ASCII : STX 01WBRS ETX HEX : 02h 30h 31h 57h 42h 52h 53h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

Run			
Transmit	Format : STX(1) ID(2) WRUN(4) ETX(1) ASCII : STX 01WRUN ETX HEX : 02h 30h 31h 57h 52h 55h 4Eh 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Stop			
Transmit	Format : STX(1) ID(2) WSTB(4) ETX(1) ASCII : STX 01WSTB ETX HEX : 02h 30h 31h 57h 53h 54h 42h 03h		8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
PRESET			
Transmit	Format : STX(1) ID(2) WFIN(4) PRESET(6) ETX(1) ASCII : STX 01WFIN012345 ETX HEX : 02h 30h 31h 57h 46h 49h 4Eh 30h 31h 32h 33h 34h 35h 03h		14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Drib			
Transmit	Format : STX(1) ID(2) WDRI(4) Drib(6) ETX(1) ASCII : STX 01WDRI012345 ETX HEX : 02h 30h 31h 57h 44h 52h 49h 30h 31h 32h 33h 34h 35h 03h		14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

Free Fall			
Transmit	Format : STX(1) ID(2) WFRE(4) Free Fall (6) ETX(1) ASCII : STX 01WFRE012345 ETX HEX : 02h 30h 31h 57h 46h 52h 45h 30h 31h 32h 33h 34h 35h 03h		14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
Formula Number Change			
Transmit	Format : STX(1) ID(2) WFML(4) Formula Number(2) ETX(1) ASCII : STX 01WFML10 ETX HEX : 02h 30h 31h 57h 46h 4Dh 4Ch 31h 30h 03h		10 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	
BIN Number Change			
Transmit	Format : STX(1) ID(2) WBIN(4) BIN Number(2) ETX(1) ASCII : STX 01WBIN10 ETX HEX : 02h 30h 31h 57h 42h 49h 4Eh 31h 30h 03h		10 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ERROR(1) ETX(1) ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	6 Byte
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

		ASCII : STX 01 ACK 0 ETX HEX : 02h 30h 31h 06h 30h 03h	
	Error	Format : STX(1) ID(2) NAK(1) ERROR(1) ETX(1) ASCII : STX 01 NAK 2 ETX HEX : 02h 30h 31h 15h 32h 03h	

7-3. Command mode (compatible with SI4400)

7-3-1. Read command

Current Weight (Displayed Weight)		
Transmit	Format: STX(1) ID(2) RCWT(4) ETX(1) ASCII : STX 01RCWT ETX HEX : 02h 30h 31h 52h 43h 57h 54h 03h	8 Byte
Respond	Format: STX(1) ID(2) RCWT(4) State1(2) State2(2) Mark(1) Current Weight (7) Unit(2) ETX(1) ASCII : STX 01RCWTST,NT,+0123.45kg ETX HEX : 02h 30h 31h 52h 43h 57h 54h 53h 54h 2Ch 4Eh 54h 2Ch 2Bh 30h 31h 32h 33h 2Eh 34h 35h 6Bh 67h 03h	24 Byte
	State 1: OL(Overloaded), ST(Stable), US(Unstable) State 2: NT(Net Weight), GS(Gross Weight)	
Time		
Transmit	Format: STX(1) ID(2) RTIM(4) ETX(1) ASCII : STX 01RTIM ETX HEX : 02h 30h 31h 52h 54h 49h 4Dh 03h	8 Byte
Respond	Format: STX(1) ID(2) RTIM(4) Time(6) ETX(1) ASCII : STX 01RTIM123035 ETX HEX : 02h 30h 31h 52h 54h 49h 4Dh 31h 32h 33h 30h 33h 35h 03h	14 Byte
Date		
Transmit	Format: STX(1) ID(2) RDAT(4) ETX(1) ASCII : STX 01RDAT ETX HEX : 02h 30h 31h 52h 44h 41h 54h 03h	8 Byte
Respond	Format: STX(1) ID(2) RDAT(4) Date(6) ETX(1) ASCII : STX 01RDAT171101 ETX HEX : 02h 30h 31h 52h 44h 41h 54h 31h 37h 31h 31h 30h 31h 03h	14 Byte

BIN Number		
Transmit	Format: STX(1) ID(2) RBIN(4) ETX(1) ASCII : STX 01RBIN ETX HEX : 02h 30h 31h 52h 42h 49h 4Eh 03h	8 Byte
Respond	Format: STX(1) ID(2) RBIN(4) BIN Number(2) ETX(1) ASCII : STX 01BIN01 ETX HEX : 02h 30h 31h 52h 42h 49h 4Eh 30h 31h 03h	10 Byte
Formula Number		
Transmit	Format: STX(1) ID(2) RFML(4) ETX(1) ASCII : STX 01RFML ETX HEX : 02h 30h 31h 52h 46h 4Dh 4Ch 03h	8 Byte
Respond	Format: STX(1) ID(2) RFML(4) Formula Number(2) ETX(1) ASCII : STX 01RFML01 ETX HEX : 02h 30h 31h 52h 46h 4Dh 4Ch 30h 31h 03h	10 Byte
PRESET of Current BIN Number		
Transmit	Format: STX(1) ID(2) RFIN(4) ETX(1) ASCII : STX 01RFIN ETX HEX : 02h 30h 31h 52h 46h 49h 4Eh 03h	8 Byte
Respond	Format: STX(1) ID(2) RFIN(4) PRESET(7) ETX(1) ASCII : STX 01RFIN0123.45 ETX HEX : 02h 30h 31h 52h 46h 49h 4Eh 30h 31h 32h 33h 2Eh 34h 35h 03h	15 Byte
Drib of Current BIN Number		
Transmit	Format: STX(1) ID(2) RDRI(4) ETX(1) ASCII : STX 01RDRI ETX HEX : 02h 30h 31h 52h 44h 52h 49h 03h	8 Byte
Respond	Format: STX(1) ID(2) RDRI(4) Drib(5) ETX(1) ASCII : STX 01RDRI01.23 ETX HEX : 02h 30h 31h 52h 44h 52h 49h 30h 31h 2Eh 32h 33h 03h	13 Byte
Free Fall of Current BIN Number		
Transmit	Format : STX(1) ID(2) RFRE(4) ETX(1) ASCII : STX 01RFRE ETX HEX : 02h 30h 31h 52h 46h 52h 45h 03h	8 Byte
Respond	Format : STX(1) ID(2) RFRE(4) Free Fall(5) ETX(1) ASCII : STX 01RFRE01.23 ETX HEX : 02h 30h 31h 52h 46h 52h 45h 30h 31h 2Eh 32h 33h 03h	13 Byte

Accumulated Weight		
Transmit	Format: STX(1) ID(2) RTTL(4) ETX(1) ASCII : STX 01RTTL ETX HEX : 02h 30h 31h 52h 54h 54h 4Ch 03h	8 Byte
Respond	Format: STX(1) ID(2) RTTL(4) Accumulated Weight(7) ETX(1) ASCII : STX 01RTTL0123.45 ETX HEX : 02h 30h 31h 52h 54h 54h 4Ch 30h 31h 32h 33h 2Eh 34h 35h 03h	15 Byte
Current Weight and Finish Weight for Each BIN of Current Formula		
Transmit	Format: STX(1) ID(2) RFTD(4) ETX(1) ASCII : STX 01RFTD ETX HEX : 02h 30h 31h 52h 46h 54h 44h 03h	8 Byte
Respond	Format: STX(1) ID(2) RFTD(4) Formula Number(2) BIN1 Finish Weight(7) ~ BIN16 Finish Weight(7) Mark(1) Current Weight(7) ETX(1) ASCII : STX 01RFTD01012.345012.345012.345012.345012.345012.345012.345012 .345012.345012.345012.345012.345012.345012.345012.345 +012. 345 ETX HEX : 02h 30h 31h 52h 46h 54h 44h 30h 31h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 30h 31h 32h 2Eh 33h 34h 35h 2Bh 30h 31h 32h 2Eh 33h 34h 35h 03h	130 Byte
Current Weight, External Input, Relay Out		
Transmit	Format: STX(1) ID(2) RWRS(4) ETX(1) ASCII : STX 01RWRS ETX HEX : 02h 30h 31h 52h 57h 52h 53h 03h	8 Byte
Respond	Format: STX(1) ID(2) RWRS(4) Mark(1) Current Weight(7) External Input(4) Relay Out(6) ETX(1) ASCII : STX 01RWRS+0123.450000000000 ETX HEX : 02h 30h 31h 52h 57h 52h 53h 2Bh 30h 31h 32h 33h 2Eh 34h 35h 30h 30h 30h 30h 30h 30h 30h 30h 30h 30h 03h	26 Byte

7-3-2. Write command

-Transmit(normal): STX + ID(2Byte) + ACK + ETX

-Transmit(Error): STX + ID(2Byte) + NAK + ETX

Zero Setting					
Transmit	Format : STX(1) ID(2) WZER(4) ETX(1) ASCII : STX 01WZER ETX HEX : 02h 30h 31h 57h 5Ah 45h 52h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Tare Setting					
Transmit	Format : STX(1) ID(2) WTAR(4) ETX(1) ASCII : STX 01WTAR ETX HEX : 02h 30h 31h 57h 54h 41h 52h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Tare Reset					
Transmit	Format : STX(1) ID(2) WTRS(4) ETX(1) ASCII : STX 01WTRS ETX HEX : 02h 30h 31h 57h 54h 52h 53h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Print					
Transmit	Format : STX(1) ID(2) WPRT(4) ETX(1) ASCII : STX 01WPRT ETX HEX : 02h 30h 31h 57h 50h 52h 54h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Print Sub-total					
Transmit	Format : STX(1) ID(2) WSPR(4) ETX(1) ASCII : STX 01WSPR ETX HEX : 02h 30h 31h 57h 53h 50h 52h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte

Print Total					
Transmit	Format : STX(1) ID(2) WGPR(4) ETX(1) ASCII : STX 01WGPR ETX HEX : 02h 30h 31h 57h 47h 50h 52h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Delete Sub-total					
Transmit	Format : STX(1) ID(2) WSTC(4) ETX(1) ASCII : STX 01WSTC ETX HEX : 02h 30h 31h 57h 53h 54h 43h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Delete Total					
Transmit	Format : STX(1) ID(2) WGTC(4) ETX(1) ASCII : STX 01WGTC ETX HEX : 02h 30h 31h 57h 47h 54h 43h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Time					
Transmit	Format : STX(1) ID(2) WTIM(4) TIME(6) ETX(1) ASCII : STX 01WTIM123035 ETX HEX : 02h 30h 31h 57h 54h 49h 4Dh 31h 32h 33h 30h 33h 35h 03h				14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Date					
Transmit	Format : STX(1) ID(2) WDAT(4) DATE(6) ETX(1) ASCII : STX 01WDAT171101 ETX HEX : 02h 30h 31h 57h 44h 41h 54h 31h 37h 31h 31h 30h 31h 03h				14 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte

BATCH RESET					
Transmit	Format : STX(1) ID(2) WBRS(4) ETX(1) ASCII : STX 01WBRS ETX HEX : 02h 30h 31h 57h 42h 52h 53h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Run					
Transmit	Format : STX(1) ID(2) WRUN(4) ETX(1) ASCII : STX 01WRUN ETX HEX : 02h 30h 31h 57h 52h 55h 4Eh 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Stop					
Transmit	Format : STX(1) ID(2) WSTB(4) ETX(1) ASCII : STX 01WSTB ETX HEX : 02h 30h 31h 57h 53h 54h 42h 03h				8 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
PRESET					
Transmit	Format : STX(1) ID(2) WFIN (4) PRESET(7) ETX(1) ASCII : STX 01WFIN0123.45 ETX HEX : 02h 30h 31h 57h 46h 49h 4Eh 30h 31h 32h 33h 2Eh 34h 35h 03h				15 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Drib					
Transmit	Format : STX(1) ID(2) WDRI(4) Drib(5) ETX(1) ASCII : STX 01WDRI01.23 ETX HEX : 02h 30h 31h 57h 42h 52h 49h 30h 31h 2Eh 32h 33h 03h				13 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte

Free Fall					
Transmit	Format : STX(1) ID(2) WFRE(4) Free Fall ㄱ(5) ETX(1) ASCII : STX 01WFRE01.23 ETX HEX : 02h 30h 31h 57h 46h 52h 45h 30h 31h 2Eh 32h 33h 03h				13 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Formula Number					
Transmit	Format : STX(1) ID(2) WFML(4) Formula Number(2) ETX(1) ASCII : STX 01WFML10 ETX HEX : 02h 30h 31h 57h 46h 4Dh 4Ch 31h 30h 03h				10 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
BIN Number					
Transmit	Format : STX(1) ID(2) WBIN(4) BIN Number(2) ETX(1) ASCII : STX 01WBIN10 ETX HEX : 02h 30h 31h 57h 42h 49h 4Eh 31h 30h 03h				10 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Current Weight and Finish Weight for Each BIN of Current Formula (282byte)					
Transmit	Format : STX(1) ID(2) WFTD(4) Formula Number(2) BIN1(PRESET(7) Drib(5) Free Fall(5)) ~ BIN16(PRESET(7) Drib(5) Free Fall(5)) ETX(1) ASCII : STX 01WFTD010123.4501.2301.230123.4501.2301.230123.4501.2301.230 123.4501.2301.230123.4501.2301.230123.4501.2301.230123.4501.230 1.2 30123.4501.2301.230123.4501.2301.230123.4501.2301.230123.4501.2 301 .230123.4501.2301.230123.4501.2301.230123.4501.2301.230123.4501. 23 01.230123.4501.2301.23 ETX HEX : 02h 30h 31h 57h 46h 54h 44h 30h 31h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h				282 Byte

	33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 30h 31h 32h 33h 2Eh 34h 35h 30h 31h 2Eh 32h 33h 30h 31h 2Eh 32h 33h 03h				
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte
Current Weight and Finish Weight for Each BIN of Current Formula (234byte)					
Transmit	Format : STX(1) ID(2) WFT1(4) Formula Number(2) BIN1(PRESET(6) Drib(4) Free Fall(4)) ~ BIN16(PRESET(6) Drib(4) Free Fall(4)) ETX(1) ASCII : STX 01WFT101012.340.120.12012.340.120.12012.340.120.12012.340.120 .12012.340.120.12012.340.120.12012.340.120.12012.340.120.12012.34 0.1 20.12012.340.120.12012.340.120.12012.340.120.12012.340.120.12012. 340 .120.12012.340.120.12012.340.120.12 ETX HEX : 02h 30h 31h 57h 46h 54h 31h 30h 31h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 30h 31h 32h 2Eh 33h 34h 30h 2Eh 31h 32h 30h 2Eh 31h 32h 03h				234 Byte
Respond	Normal	Format : STX(1) ID(2) ACK(1) ETX(1) ASCII : STX 01 ACK ETX HEX : 02h 30h 31h 06h 03h	Error	Format : STX(1) ID(2) NAK(1) ETX(1) ASCII : STX 01 NAK ETX HEX : 02h 30h 31h 15h 03h	5 Byte

※ **How to calculate CHECK SUM**

Check sum is a remainder when Sum of HEX value of the data from STX to ETX and the value is into 100.

ex) The sum HEX value from STX to ETX(02,30,31,52,43,57,54,03) is 1A6h.

Then, divide 1A6h by 100h(1A6h/100h) and the remainder is A6h.

This value is converted to ASCII and transferred to 41(A) 36(6).

Command Judgement of Command mode judges and outputs 06h(ACK) and 15h(NAK), Error code between the data which starts with 02h(STX) and ends with 03h(ETX)

7-4. Modbus

- RO : Read Only
- RW : Read Write
- Setting value for Each Part Number cannot be over Max Capacity
ex) If you want to set 35.00kg, input 3500 (0xDAC)
- Input 6 digits to set Date and Time
ex) Input 140101 (0x22345) for 2014 January 1st
Input 155017 (0x25D89) for 3:50:17 pm
- Refer to Memory Register Table below for lamp, error, digital input, standard key, special key.
- Modbus Function Codes
 - '03' (0x03) : Read Holding Registers
 - '04' (0x04) : Read Input Registers
 - '06' (0x06) : Write Single Registers
 - '16' (0x10) : Write Multiple Registers
- CRC Check Method is CRC-16.

7-4-1. Data Address Map

Content	Address		Length	Feature
Decimal Point	172	0xC1	1	R
Tare Weight	173	0xAD	2	R
Key Input Tare Weight	175	0xAF	2	R
External Input	177	0xB1	2	R
Current Weight	183	0xB7	2	R
Lamp	185	0xB9	2	R
Error	187	0xBB	2	R
Relay Out	189	0xBD	1	R
Lamp	190	0xBE	2	R
Error	192	0xC0	2	R
Lamp	194	0xC2	1	R / W
Formula Number	196	0xC4	1	R / W
BIN Number	197	0xC5	1	R / W
BIN Weighing Count	198	0xC6	1	R
Measured Gross Weight	199	0xC7	2	R

Content	Address		Length	Feature
PRESET Gross Weight	201	0xC9	2	R
PRESET	203	0xCB	2	R
Drib	205	0xCD	2	R
Free Fall	207	0xCF	1	R
Over-value	208	0xD0	1	R
Under-value	209	0xD1	1	R
Sub-total Count(Current Formula)	210	0xD2	2	R
Sub-total Weight (Current Formula)	212	0xD4	2	R
Total Count (Whole Formula)	214	0xD6	2	R
Total Weight (Whole Formula)	216	0xD8	2	R
BIN 01 Measured Weight	218	0xDA	2	R
BIN 02 Measured Weight	220	0xDC	2	R
BIN 03 Measured Weight	222	0xDE	2	R
BIN 04 Measured Weight	224	0xE0	2	R
BIN 05 Measured Weight	226	0xE2	2	R
BIN 06 Measured Weight	228	0xE4	2	R
BIN 07 Measured Weight	230	0xE6	2	R
BIN 08 Measured Weight	232	0xE8	2	R
BIN 09 Measured Weight	234	0xEA	2	R
BIN 10 Measured Weight	236	0xEC	2	R
BIN 11 Measured Weight	238	0xEE	2	R
BIN 11 Measured Weight	240	0xF0	2	R
BIN 13 Measured Weight	242	0xF2	2	R
BIN 14 Measured Weight	244	0xF4	2	R
BIN 15 Measured Weight	246	0xF6	2	R
BIN 16 Measured Weight	248	0xF8	2	R
BIN 17 Measured Weight	250	0xFA	2	R
BIN 18 Measured Weight	252	0xFC	2	R

Content	Address		Length	Feature
BIN 19 Measured Weight	254	0xFE	2	R
BIN 20 Measured Weight	256	0x100	2	R
1 st Weighing BIN Number	258	0x102	1	R
2 nd Weighing BIN Number	259	0x103	1	R
3 rd Weighing BIN Number	260	0x104	1	R
4 th Weighing BIN Number	261	0x105	1	R
5 th Weighing BIN Number	262	0x106	1	R
6 th Weighing BIN Number	263	0x107	1	R
7 th Weighing BIN Number	264	0x108	1	R
8 th Weighing BIN Number	265	0x109	1	R
9 th Weighing BIN Number	266	0x10A	1	R
10 th Weighing BIN Number	267	0x10B	1	R
11 th Weighing BIN Number	268	0x10C	1	R
12 th Weighing BIN Number	269	0x10D	1	R
13 th Weighing BIN Number	270	0x10E	1	R
14 th Weighing BIN Number	271	0x10F	1	R
15 th Weighing BIN Number	272	0x110	1	R
16 th Weighing BIN Number	273	0x111	1	R
17 th Weighing BIN Number	274	0x112	1	R
18 th Weighing BIN Number	275	0x113	1	R
19 th Weighing BIN Number	276	0x114	1	R
20 th Weighing BIN Number	277	0x115	1	R
BIN 01 PRESET	278	0x116	2	R
BIN 02 PRESET	280	0x118	2	R
BIN 03 PRESET	282	0x11A	2	R
BIN 04 PRESET	284	0x11C	2	R
BIN 05 PRESET	286	0x11E	2	R
BIN 06 PRESET	288	0x120	2	R
BIN 07 PRESET	290	0x122	2	R
BIN 08 PRESET	292	0x124	2	R

Content	Address		Length	Feature
BIN 09 PRESET	294	0x126	2	R
BIN 10 PRESET	296	0x128	2	R
BIN 11 PRESET	298	0x12A	2	R
BIN 12 PRESET	300	0x12C	2	R
BIN 13 PRESET	302	0x12E	2	R
BIN 14 PRESET	304	0x130	2	R
BIN 15 PRESET	306	0x132	2	R
BIN 16 PRESET	308	0x134	2	R
BIN 17 PRESET	310	0x136	2	R
BIN 18 PRESET	312	0x138	2	R
BIN 19 PRESET	314	0x13A	2	R
BIN 20 PRESET	316	0x13C	2	R
BIN 01 Drib	318	0x13E	2	R
BIN 02 Drib	320	0x140	2	R
BIN 03 Drib	322	0x142	2	R
BIN 04 Drib	324	0x144	2	R
BIN 05 Drib	326	0x146	2	R
BIN 06 Drib	328	0x148	2	R
BIN 07 Drib	330	0x14A	2	R
BIN 08 Drib	332	0x14C	2	R
BIN 09 Drib	334	0x14E	2	R
BIN 10 Drib	336	0x150	2	R
BIN 11 Drib	338	0x152	2	R
BIN 12 Drib	340	0x154	2	R
BIN 13 Drib	342	0x156	2	R
BIN 14 Drib	344	0x158	2	R
BIN 15 Drib	346	0x15A	2	R
BIN 16 Drib	348	0x15C	2	R
BIN 17 Drib	350	0x15E	2	R
BIN 18 Drib	352	0x160	2	R

Content	Address		Length	Feature
BIN 19 Drib	354	0x162	2	R
BIN 20 Drib	356	0x164	2	R
BIN 01 Free Fall	358	0x166	1	R
BIN 02 Free Fall	359	0x167	1	R
BIN 03 Free Fall	360	0x168	1	R
BIN 04 Free Fall	361	0x169	1	R
BIN 05 Free Fall	362	0x16A	1	R
BIN 06 Free Fall	363	0x16B	1	R
BIN 07 Free Fall	364	0x16C	1	R
BIN 08 Free Fall	365	0x16D	1	R
BIN 09 Free Fall	366	0x16E	1	R
BIN 10 Free Fall	367	0x16F	1	R
BIN 11 Free Fall	368	0x170	1	R
BIN 12 Free Fall	369	0x171	1	R
BIN 13 Free Fall	370	0x172	1	R
BIN 14 Free Fall	371	0x173	1	R
BIN 15 Free Fall	372	0x174	1	R
BIN 16 Free Fall	373	0x175	1	R
BIN 17 Free Fall	374	0x176	1	R
BIN 18 Free Fall	375	0x177	1	R
BIN 19 Free Fall	376	0x178	1	R
BIN 20 Free Fall	377	0x179	1	R
BIN 01 Over-value	378	0x17A	1	R
BIN 02 Over-value	379	0x17B	1	R
BIN 03 Over-value	380	0x17C	1	R
BIN 04 Over-value	381	0x17D	1	R
BIN 05 Over-value	382	0x17E	1	R
BIN 06 Over-value	383	0x17F	1	R
BIN 07 Over-value	384	0x180	1	R

Content	Address		Length	Feature
BIN 08 Over-value	385	0x181	1	R
BIN 09 Over-value	386	0x182	1	R
BIN 10 Over-value	387	0x183	1	R
BIN 11 Over-value	388	0x184	1	R
BIN 12 Over-value	389	0x185	1	R
BIN 13 Over-value	390	0x186	1	R
BIN 14 Over-value	391	0x187	1	R
BIN 15 Over-value	392	0x188	1	R
BIN 16 Over-value	393	0x189	1	R
BIN 17 Over-value	394	0x18A	1	R
BIN 18 Over-value	395	0x18B	1	R
BIN 19 Over-value	396	0x18C	1	R
BIN 20 Over-value	397	0x18D	1	R
BIN 01 Under-value	398	0x18E	1	R
BIN 02 Under-value	399	0x18F	1	R
BIN 03 Under-value	400	0x190	1	R
BIN 04 Under-value	401	0x191	1	R
BIN 05 Under-value	402	0x192	1	R
BIN 06 Under-value	403	0x193	1	R
BIN 07 Under-value	404	0x194	1	R
BIN 08 Under-value	405	0x195	1	R
BIN 09 Under-value	406	0x196	1	R
BIN 10 Under-value	407	0x197	1	R
BIN 11 Under-value	408	0x198	1	R
BIN 12 Under-value	409	0x199	1	R
BIN 13 Under-value	410	0x19A	1	R
BIN 14 Under-value	411	0x19B	1	R
BIN 15 Under-value	412	0x19C	1	R
BIN 16 Under-value	413	0x19D	1	R

Content	Address		Length	Feature
BIN 17 Under-value	414	0x19E	1	R
BIN 18 Under-value	415	0x19F	1	R
BIN 19 Under-value	416	0x1A0	1	R
BIN 20 Under-value	417	0x1A1	1	R
Saved Formula Number	418	0x1A2	1	R / W
Saved Formula 1 st Weighing BIN Number	419	0x1A3	1	R / W
Saved Formula 2 nd Weighing BIN Number	420	0x1A4	1	R / W
Saved Formula 3 rd Weighing BIN Number	421	0x1A5	1	R / W
Saved Formula 4 th Weighing BIN Number	422	0x1A6	1	R / W
Saved Formula 5 th Weighing BIN Number	423	0x1A7	1	R / W
Saved Formula 6 th Weighing BIN Number	424	0x1A8	1	R / W
Saved Formula 7 th Weighing BIN Number	425	0x1A9	1	R / W
Saved Formula 8 th Weighing BIN Number	426	0x1AA	1	R / W
Saved Formula 9 th Weighing BIN Number	427	0x1AB	1	R / W
Saved Formula 10 th Weighing BIN Number	428	0x1AC	1	R / W
Saved Formula 11 th Weighing BIN Number	429	0x1AD	1	R / W
Saved Formula 12 th Weighing BIN Number	430	0x1AE	1	R / W

Content	Address		Length	Feature
Saved Formula 13 th Weighing BIN Number	431	0x1AF	1	R / W
Saved Formula 14 th Weighing BIN Number	432	0x1B0	1	R / W
Saved Formula 15 th Weighing BIN Number	433	0x1B1	1	R / W
Saved Formula 16 th Weighing BIN Number	434	0x1B2	1	R / W
Saved Formula 17 th Weighing BIN Number	435	0x1B3	1	R / W
Saved Formula 18 th Weighing BIN Number	436	0x1B4	1	R / W
Saved Formula 19 th Weighing BIN Number	437	0x1B5	1	R / W
Saved Formula 20 th Weighing BIN Number	438	0x1B6	1	R / W
Saved Formula BIN 01 PRESET	439	0x1B7	2	R / W
Saved Formula BIN 02 PRESET	441	0x1B9	2	R / W
Saved Formula BIN 03 PRESET	443	0x1BB	2	R / W
Saved Formula BIN 04 PRESET	445	0x1BD	2	R / W
Saved Formula BIN 05 PRESET	447	0x1BF	2	R / W
Saved Formula BIN 06 PRESET	449	0x1C1	2	R / W
Saved Formula BIN 07 PRESET	451	0x1C3	2	R / W
Saved Formula BIN 08 PRESET	453	0x1C5	2	R / W
Saved Formula BIN 09 PRESET	455	0x1C7	2	R / W
Saved Formula BIN 10 PRESET	457	0x1C9	2	R / W
Saved Formula BIN 11 PRESET	459	0x1CB	2	R / W
Saved Formula BIN 12 PRESET	461	0x1CD	2	R / W
Saved Formula BIN 13 PRESET	463	0x1CF	2	R / W
Saved Formula BIN 14 PRESET	465	0x1D1	2	R / W
Saved Formula BIN 15 PRESET	467	0x1D3	2	R / W

Content	Address		Length	Feature
Saved Formula BIN 16 PRESET	469	0x1D5	2	R / W
Saved Formula BIN 17 PRESET	471	0x1D7	2	R / W
Saved Formula BIN 18 PRESET	473	0x1D9	2	R / W
Saved Formula BIN 19 PRESET	475	0x1DB	2	R / W
Saved Formula BIN 20 PRESET	477	0x1DD	2	R / W
Saved Formula BIN 01 Drib	479	0x1DF	2	R / W
Saved Formula BIN 02 Drib	481	0x1E1	2	R / W
Saved Formula BIN 03 Drib	483	0x1E3	2	R / W
Saved Formula BIN 04 Drib	485	0x1E5	2	R / W
Saved Formula BIN 05 Drib	487	0x1E7	2	R / W
Saved Formula BIN 06 Drib	489	0x1E9	2	R / W
Saved Formula BIN 07 Drib	491	0x1EB	2	R / W
Saved Formula BIN 08 Drib	493	0x1ED	2	R / W
Saved Formula BIN 09 Drib	495	0x1EF	2	R / W
Saved Formula BIN 10 Drib	497	0x1F1	2	R / W
Saved Formula BIN 11 Drib	499	0x1F3	2	R / W
Saved Formula BIN 12 Drib	501	0x1F5	2	R / W
Saved Formula BIN 13 Drib	503	0x1F7	2	R / W
Saved Formula BIN 14 Drib	505	0x1F9	2	R / W
Saved Formula BIN 15 Drib	507	0x1FB	2	R / W
Saved Formula BIN 16 Drib	509	0x1FD	2	R / W
Saved Formula BIN 17 Drib	511	0x1FF	2	R / W
Saved Formula BIN 18 Drib	513	0x201	2	R / W
Saved Formula BIN 19 Drib	515	0x203	2	R / W
Saved Formula BIN 20 Drib	517	0x205	2	R / W
Saved Formula BIN 01 Free Fall	519	0x207	1	R / W
Saved Formula BIN 02 Free Fall	520	0x208	1	R / W

Saved Formula BIN 03 Free Fall	521	0x209	1	R / W
Saved Formula BIN 04 Free Fall	522	0x20A	1	R / W
Saved Formula BIN 05 Free Fall	523	0x20B	1	R / W
Saved Formula BIN 06 Free Fall	524	0x20C	1	R / W
Saved Formula BIN 07 Free Fall	525	0x20D	1	R / W
Saved Formula BIN 08 Free Fall	526	0x20E	1	R / W
Saved Formula BIN 09 Free Fall	527	0x20F	1	R / W
Saved Formula BIN 10 Free Fall	528	0x210	1	R / W
Saved Formula BIN 11 Free Fall	529	0x211	1	R / W
Saved Formula BIN 12 Free Fall	530	0x212	1	R / W
Saved Formula BIN 13 Free Fall	531	0x213	1	R / W
Saved Formula BIN 14 Free Fall	532	0x214	1	R / W
Saved Formula BIN 15 Free Fall	533	0x215	1	R / W
Saved Formula BIN 16 Free Fall	534	0x216	1	R / W
Saved Formula BIN 17 Free Fall	535	0x217	1	R / W
Saved Formula BIN 18 Free Fall	536	0x218	1	R / W
Saved Formula BIN 19 Free Fall	537	0x219	1	R / W
Saved Formula BIN 20 Free Fall	538	0x21A	1	R / W
Saved Formula BIN 01 Over-value	539	0x21B	1	R / W
Saved Formula BIN 02 Over-value	540	0x21C	1	R / W
Saved Formula BIN 03 Over-value	541	0x21D	1	R / W
Saved Formula BIN 04 Over-value	542	0x21E	1	R / W
Saved Formula BIN 05 Over-value	543	0x21F	1	R / W
Saved Formula BIN 06 Over-value	544	0x220	1	R / W
Saved Formula BIN 07 Over-value	545	0x221	1	R / W
Saved Formula BIN 08 Over-value	546	0x222	1	R / W
Saved Formula BIN 09 Over-value	547	0x223	1	R / W
Saved Formula BIN 10 Over-value	548	0x224	1	R / W
Saved Formula BIN 11 Over-value	549	0x225	1	R / W

Content	Address		Length	Feature
Saved Formula BIN 12 Over-value	550	0x226	1	R / W
Saved Formula BIN 13 Over-value	551	0x227	1	R / W
Saved Formula BIN 14 Over-value	552	0x228	1	R / W
Saved Formula BIN 15 Over-value	553	0x229	1	R / W
Saved Formula BIN 16 Over-value	554	0x22A	1	R / W
Saved Formula BIN 17 Over-value	555	0x22B	1	R / W
Saved Formula BIN 18 Over-value	556	0x22C	1	R / W
Saved Formula BIN 19 Over-value	557	0x22D	1	R / W
Saved Formula BIN 20 Over-value	558	0x22E	1	R / W
Saved Formula BIN 01 Under-value	559	0x22F	1	R / W
Saved Formula BIN 02 Under-value	560	0x230	1	R / W
Saved Formula BIN 03 Under-value	561	0x231	1	R / W
Saved Formula BIN 04 Under-value	562	0x232	1	R / W
Saved Formula BIN 05 Under-value	563	0x233	1	R / W
Saved Formula BIN 06 Under-value	564	0x234	1	R / W
Saved Formula BIN 07 Under-value	565	0x235	1	R / W
Saved Formula BIN 08 Under-value	566	0x236	1	R / W
Saved Formula BIN 09 Under-value	567	0x237	1	R / W
Saved Formula BIN 10 Under-value	568	0x238	1	R / W
Saved Formula BIN 11 Under-value	569	0x239	1	R / W
Saved Formula BIN 12 Under-value	570	0x23A	1	R / W
Saved Formula BIN 13 Under-value	571	0x23B	1	R / W
Saved Formula BIN 14 Under-value	572	0x23C	1	R / W
Saved Formula BIN 15 Under-value	573	0x23D	1	R / W
Saved Formula BIN 16 Under-value	574	0x23E	1	R / W
Saved Formula BIN 17 Under-value	575	0x23F	1	R / W
Saved Formula BIN 18 Under-value	576	0x240	1	R / W
Saved Formula BIN 19 Under-value	577	0x241	1	R / W
Saved Formula BIN 20 Under-value	578	0x242	1	R / W

Content	Address		Length	Feature
BIN 01 Total Weight	579	0x243	2	R
BIN 02 Total Weight	581	0x245	2	R
BIN 03 Total Weight	583	0x247	2	R
BIN 04 Total Weight	585	0x249	2	R
BIN 05 Total Weight	587	0x24B	2	R
BIN 06 Total Weight	589	0x24D	2	R
BIN 07 Total Weight	591	0x24F	2	R
BIN 08 Total Weight	593	0x251	2	R
BIN 09 Total Weight	595	0x253	2	R
BIN 10 Total Weight	597	0x255	2	R
BIN 11 Total Weight	599	0x257	2	R
BIN 12 Total Weight	601	0x259	2	R
BIN 13 Total Weight	603	0x25B	2	R
BIN 14 Total Weight	605	0x25D	2	R
BIN 15 Total Weight	607	0x25F	2	R
BIN 16 Total Weight	609	0x261	2	R
BIN 17 Total Weight	611	0x263	2	R
BIN 18 Total Weight	613	0x265	2	R
BIN 19 Total Weight	615	0x267	2	R
BIN 20 Total Weight	617	0x269	2	R
Formula 01 Sub-total Count	619	0x26B	2	R
Formula 02 Sub-total Count	621	0x26D	2	R
Formula 03 Sub-total Count	623	0x26F	2	R
Formula 04 Sub-total Count	625	0x271	2	R
Formula 05 Sub-total Count	627	0x273	2	R
Formula 06 Sub-total Count	629	0x275	2	R
Formula 07 Sub-total Count	631	0x277	2	R
Formula 08 Sub-total Count	633	0x279	2	R
Formula 09 Sub-total Count	635	0x27B	2	R
Formula 10 Sub-total Count	637	0x27D	2	R

Content	Address		Length	Feature
Formula 11 Sub-total Count	639	0x27F	2	R
Formula 12 Sub-total Count	641	0x281	2	R
Formula 13 Sub-total Count	643	0x283	2	R
Formula 14 Sub-total Count	645	0x285	2	R
Formula 15 Sub-total Count	647	0x287	2	R
Formula 16 Sub-total Count	649	0x289	2	R
Formula 17 Sub-total Count	651	0x28B	2	R
Formula 18 Sub-total Count	653	0x28D	2	R
Formula 19 Sub-total Count	655	0x28F	2	R
Formula 20 Sub-total Count	657	0x291	2	R
Formula 21 Sub-total Count	659	0x293	2	R
Formula 22 Sub-total Count	661	0x295	2	R
Formula 23 Sub-total Count	663	0x297	2	R
Formula 24 Sub-total Count	665	0x299	2	R
Formula 25 Sub-total Count	667	0x29B	2	R
Formula 26 Sub-total Count	669	0x29D	2	R
Formula 27 Sub-total Count	671	0x29F	2	R
Formula 28 Sub-total Count	673	0x2A1	2	R
Formula 29 Sub-total Count	675	0x2A3	2	R
Formula 30 Sub-total Count	677	0x2A5	2	R
Formula 31 Sub-total Count	679	0x2A7	2	R
Formula 32 Sub-total Count	681	0x2A9	2	R
Formula 33 Sub-total Count	683	0x2AB	2	R
Formula 34 Sub-total Count	685	0x2AD	2	R
Formula 35 Sub-total Count	687	0x2AF	2	R
Formula 36 Sub-total Count	689	0x2B1	2	R
Formula 37 Sub-total Count	691	0x2B3	2	R
Formula 38 Sub-total Count	693	0x2B5	2	R
Formula 39 Sub-total Count	695	0x2B7	2	R
Formula 40 Sub-total Count	697	0x2B9	2	R

Content	Address		Length	Feature
Formula 41 Sub-total Count	699	0x2BB	2	R
Formula 42 Sub-total Count	701	0x2BD	2	R
Formula 43 Sub-total Count	703	0x2BF	2	R
Formula 44 Sub-total Count	705	0x2C1	2	R
Formula 45 Sub-total Count	707	0x2C3	2	R
Formula 46 Sub-total Count	709	0x2C5	2	R
Formula 47 Sub-total Count	711	0x2C7	2	R
Formula 48 Sub-total Count	713	0x2C9	2	R
Formula 49 Sub-total Count	715	0x2CB	2	R
Formula 50 Sub-total Count	717	0x2CD	2	R
Formula 01 Sub-total Weight	719	0x2CF	2	R
Formula 02 Sub-total Weight	721	0x2D1	2	R
Formula 03 Sub-total Weight	723	0x2D3	2	R
Formula 04 Sub-total Weight	725	0x2D5	2	R
Formula 05 Sub-total Weight	727	0x2D7	2	R
Formula 06 Sub-total Weight	729	0x2D9	2	R
Formula 07 Sub-total Weight	731	0x2DB	2	R
Formula 08 Sub-total Weight	733	0x2DD	2	R
Formula 09 Sub-total Weight	735	0x2DF	2	R
Formula 10 Sub-total Weight	737	0x2E1	2	R
Formula 11 Sub-total Weight	739	0x2E3	2	R
Formula 12 Sub-total Weight	741	0x2E5	2	R
Formula 13 Sub-total Weight	743	0x2E7	2	R
Formula 14 Sub-total Weight	745	0x2E9	2	R
Formula 15 Sub-total Weight	747	0x2EB	2	R
Formula 16 Sub-total Weight	749	0x2ED	2	R
Formula 17 Sub-total Weight	751	0x2EF	2	R
Formula 18 Sub-total Weight	753	0x2F1	2	R
Formula 19 Sub-total Weight	755	0x2F3	2	R
Formula 20 Sub-total Weight	757	0x2F5	2	R

Content	Address		Length	Feature
Formula 21 Sub-total Weight	759	0x2F7	2	R
Formula 22 Sub-total Weight	761	0x2F9	2	R
Formula 23 Sub-total Weight	763	0x2FB	2	R
Formula 24 Sub-total Weight	765	0x2FD	2	R
Formula 25 Sub-total Weight	767	0x2FF	2	R
Formula 26 Sub-total Weight	769	0x301	2	R
Formula 27 Sub-total Weight	771	0x303	2	R
Formula 28 Sub-total Weight	773	0x305	2	R
Formula 29 Sub-total Weight	775	0x307	2	R
Formula 30 Sub-total Weight	777	0x309	2	R
Formula 31 Sub-total Weight	779	0x30B	2	R
Formula 32 Sub-total Weight	781	0x30D	2	R
Formula 33 Sub-total Weight	783	0x30F	2	R
Formula 34 Sub-total Weight	785	0x311	2	R
Formula 35 Sub-total Weight	787	0x313	2	R
Formula 36 Sub-total Weight	789	0x315	2	R
Formula 37 Sub-total Weight	791	0x317	2	R
Formula 38 Sub-total Weight	793	0x319	2	R
Formula 39 Sub-total Weight	795	0x31B	2	R
Formula 40 Sub-total Weight	797	0x31D	2	R
Formula 41 Sub-total Weight	799	0x31F	2	R
Formula 42 Sub-total Weight	801	0x321	2	R
Formula 43 Sub-total Weight	803	0x323	2	R
Formula 44 Sub-total Weight	805	0x325	2	R
Formula 45 Sub-total Weight	807	0x327	2	R
Formula 46 Sub-total Weight	809	0x329	2	R
Formula 47 Sub-total Weight	811	0x32B	2	R
Formula 48 Sub-total Weight	813	0x32D	2	R
Formula 49 Sub-total Weight	815	0x32F	2	R
Formula 50 Sub-total Weight	817	0x331	2	R

7-4-2. External Input Data Map

1bit	2bit	3bit	4bit	5bit	6bit	7bit	8bit
IN 1	IN 2	IN 3	IN 4	IN 5	IN 6		
9bit	10bit	11bit	12bit	13bit	14bit	15bit	16bit

7-4-3. Lamp Data Map

1bit	2bit	3bit	4bit	5bit	6bit	7bit	8bit
Stable	Zero	Tare	Hold	TXD	RXD	RUN	OUT1
9bit	10bit	11bit	12bit	13bit	14bit	15bit	16bit
OUT2	OUT3	OUT4	OUT5	OUT6	OUT7		SD_CAD
17bit	18bit	19bit	20bit	21bit	22bit	23bit	24bit
Mark'-'		Unit'k	Unit't'	Unit'g'			

7-4-4. Key Data Map

0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08
Zero	Tare/ Tare Reset	Run	Formula	BIN	Stop	PRESET	Drib
0x09	0x10	0x11	0x12	0x13	0x14	0x15	0x16
Free Fall	Print	Tare	Tare Reset		Run/Stop	BATCH Reset	

7-4-5. Relay Out

1bit	2bit	3bit	4bit	5bit	6bit	7bit	8bit
OUT1	OUT2	OUT3	OUT4	OUT5	OUT6	OUT7	

7-4-6. Error

1bit	2bit	3bit	4bit	5bit	6bit	7bit	8bit
	Load Cell	OverLoad	Unpass	SD Card	Er - 001	Er - 004	Er - 005
9bit	10bit	11bit	12bit	13bit	14bit	15bit	16bit
Er - 006	Er - 007	Er - 009	Er - 010	Er - 011	Er - 012		SD_CAD
17bit	18bit	19bit	20bit	21bit	22bit	23bit	24bit
Mark'-'		Unit'k'	Unit't'	Unit'g'			

7-5. Print format

It can be connected to all kinds of Serial Interface printers, but recommend you to use SE7200, SE7300 (30 columns) since the print format is programmed and fixed with the models.

	Korean (F120-00)	English (F120-01)
Continuous F121-00	날짜 : 2016-03-28 시간 : 10:20:25 장비Number : 01 Formula : 01 BIN Number 중량 01BIN 1.000kg 02BIN 1.004kg 03BIN 1.139kg 07BIN 0.500kg	DATE : 2016-03-28 TIME : 10:20:25 ID_N : 01 FORMULA : 01 BIN_NUMBER WEIGHT 01BIN 1.000kg 02BIN 1.004kg 03BIN 1.139kg 07 BIN 0.500kg SERIAL : 3 TOTAL WEIGHT : 3.643kg
Single F121-01	날짜 : 2016-03-28 시간 : 10:20:25 장비Number : 01 Formula : 01 순번 : 3 총중량 : 3.643kg	DATE : 2016-03-28 TIME : 10:20:25 ID_N : 01 FORMULA : 01 SERIAL : 3 TOTAL WEIGHT : 3.643kg

Sub-total	<p style="text-align: center;">소 계</p> <p>날짜 : 2016-03-28 시간 : 10:20:25 장비Number : 01 Formula : 01</p> <p>BIN Number 중량</p> <p>01BIN 1.000kg 02BIN 1.004kg 03BIN 1.139kg 07BIN 0.500kg</p>	<p style="text-align: center;">SUB-TOTAL</p> <p>DATE : 2016-03-28 TIME : 10:20:25 ID_N : 01 FORMULA : 01</p> <p>BIN_NUMBER WEIGHT</p> <p>01BIN 1.000kg 02BIN 1.004kg 03BIN 1.139kg 07BIN 0.500kg</p> <p>TOTAL COUNT : 4 TOTAL WEIGHT: 13.572kg</p>
Total	<p style="text-align: center;">총 계</p> <p>날짜 : 2016-03-28 시간 : 10:20:25 장비Number : 01</p> <p>Formula 총횟수 중 량</p> <p>01 4 1.000kg 02 5 1.004kg 03 6 1.139kg</p> <p>총횟수 : 4 총중량 : 13.572kg</p>	<p style="text-align: center;">GRD-TOTAL</p> <p>DATE : 2016-03-28 TIME : 10:20:25 ID_N : 01</p> <p>FORMULA SERIAL WEIGHT</p> <p>01 4 1.000kg 02 5 1.004kg 03 6 1.139kg</p> <p>TOTAL COUNT : 4 TOTAL WEIGHT: 13.572kg</p>

Date and Time will be printed when it is number first in spite of Continuous format setting.

8. Error & treatment

8-1. Error during Load Cell Installation

Error	Causing	Treatment	Remark
Weight is unstable	<ol style="list-style-type: none"> 1. Load cell broken 2. Load cell isolation resistance error 3. There is interruption on the weighing part 4. Summing board broken 	<ol style="list-style-type: none"> 1. Measure input/output resistance of Load cell. 2. Measure Load cell isolation resistance 3. Change Summing Board 4. Make sure that there is nothing on the scale part. 	<ol style="list-style-type: none"> 1. Input Resistance of “EXC+” and “EXC-“ is about $400\Omega \pm 30$ 2. Output Resistance of “SIG+“ and “SIG-” is about $350\Omega \pm 3.5$ 3. Isolate Resistance is more than $100M\Omega$
Weight increases regularly or does not returns to Zero.	<ol style="list-style-type: none"> 1. Load cell error 2. Load cell connection Error 	<ol style="list-style-type: none"> 1. Check load cell connection 2. Measure resistance value of load cell 	
Weight value is Minus (-)	<ol style="list-style-type: none"> 1. Load cell Output wires (SIG+, SIG-) are switched 	<ol style="list-style-type: none"> 1. Check load cell connection 	
“UnPAss” displays	<ol style="list-style-type: none"> 1. Load cell broken or Indicator connection error 	<ol style="list-style-type: none"> 1. Check load cell 2. Check load cell connection 	
	<ol style="list-style-type: none"> 1. Power has been supplied when the scale part is not empty. 	<ol style="list-style-type: none"> 1. Remove weight on the load cell 	
“OL” display (OverLoad)	<ol style="list-style-type: none"> 1. Load cell broken or Indicator connection Error 2. Weight over Max Capacity 	<ol style="list-style-type: none"> 1. Check load cell 2. Check load cell connection 3. Remove overloaded weight 	

8-2. Error during Calibration

Display	Cause
Er-001	The value of (Max Capacity/Division) is over 20,000.
Er-004	Standard weight value is over than Max Capacity
Er-005	Standard weight value is less than 10% of Max Capacity
Er-006	A/D Converting value is over the Maximum.
Er-007	A/D Converting value is under the Minimum.
Er-009	There is continuous vibration on the weighing part during calibration.
Er-010	Under "F-function" model, set value is "N.A"
Er-011	Exceed Tare range
Er-012	Exceed Near Zero range

8-3. Error and Treatment

Following is weighing process error and the indicator cannot measure precise weight in these cases.

Display	Cause	Treatment
<p>“Ad-Err” or “OL”</p>	<p>1. Load cell broken 2. Load cell cable broken 3. Load cell connection Error 4. A/D Board Error 5. Analogue value over 1,040,000. ※ “-OVER-” displays as well if the current value is over the absolute value of Max Capacity. Ex) Max Capacity is “100” and current weight is uner “-100” : “-OVER-” shows up.</p>	<p>1. Check load cell input digital value on Test mode 1. If this value does not change, check load cell and connection condition first. 2. Check weight value error with another indicator. 3. Check A/D converting board error with another indicator. 4. Check Power cable 5. Check load cell terminal</p>
<p>“UnPAss”</p>	<p>1. Power has been supplied when the scale part is not empty. ※ F101-00 : “UnPAss” displays when power has been supplied though there is load of 10% of Max Capacity on the scale part. ※ F101-01 : Indicator saved previous zero value so it normally works with the load on the scale part not showing “UnPAss”.</p>	<p>1. Make sure that the weighing part is empty before turn on the power. 2. Set F101-01(Back-up) so that the indicator can remember first empty value.</p>
<p>“HALt”</p>	<p>“HALT” on the display or continuous beep – Hard ware error</p>	<p>Please contact the distributor or the Head Office.</p>

Warranty Certification

This product passed strict quality test of SEWHACNM Co., LTD.

If there is a defect of manufacturing or abnormal detection within warranty period, please contact our agent or distributor with this Warranty Certification so that you can get the product repaired or replaced.

Warranty Clause

1. The warranty period is one(1) year from your purchase date.

2. Warranty Exemption Clause

- Warranty period expired
- Mal-function caused by repairmen, modification, etc without any authorization of the Headquarter.
- Mal-function caused by user's carelessness
- Mal-function caused by distribution of non-authorized distributor or agent
- Mal-function caused since user did not follow the precautions.
- Mal-function or defection caused by Fore Majeur
- Without presentation of this Warranty Certification

3. Other

- Warranty Certification without authorized stamp is invalid.

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	Model	SI 550
	Serial No.	
	AUTHORIZED STAMP	