



Approved for Digital  
Weigh Indicator

# Digital Weighing Indicator **SI 460C**

## User Manual



2014.07.16



**SEWHACNM**  
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## 1. BEFORE INSTALLATION

### Caution / Warning Marks



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



This mark cautions the possibility to arrive serious human body injury or product lose in case of wrongly used.

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3. This manual may be changed as the version is upgraded, without previous notice.

### Inquiries

If you have any kinds of inquiries for this model, please contact your local agent or Head Office.

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## 2. INTRODUCTION

### 2-1. Introduction

Thank you for your choice of this SI 460A Industrial Digital Weighing Indicator.

This SI 460A model is high-performance weighing Indicator.

Please review and learn this instruction Manual and enjoy your process efficiency with "SI 460A" Weighing Indicator.



### 2-2. Cautions

1. Don't drop on the ground and avoid serious external damage on item.
2. Don't install under sunshine or heavy vibrated condition.
3. Don't install place where high voltage or heavy electric noise condition.
4. When you connect with other devices, please turn off the power of item.
5. Avoid from water damage.
6. For the improvement of function or performance, we can change item specification without previous notice or permission.
7. Item's performance will be up-dated continuously base on previous version's performance.

### 2-3. Features

1. SI 460A model is the square DIN SIZE and compact enough, so it is easy to install.
2. Front panel is covered with Polycarbonate film, strong against dust and water.
3. RS422, RS485 serial interface and Modbus(RTU) is standard installed.
4. User can choose various options; 4-20mA, 0-10V, RS232C and Extra RS422, RS485.

## 3. SPECIFICATION

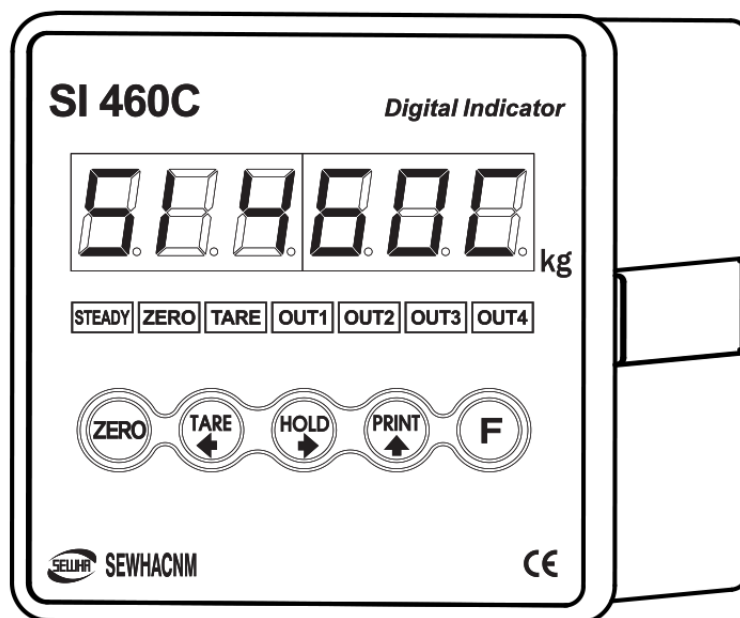
### 3-1 Specification

| Content            |                                                                                  | Specification                                                            |
|--------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Performance        | External Resolution                                                              | 1/20,000                                                                 |
|                    | Internal Resolution                                                              | 1/2,000,000 (±1,000,000)                                                 |
|                    | Input Sensitivity                                                                | Min 0.1μV/V                                                              |
|                    | Max Signal Input Voltage                                                         | 3.0mV/V                                                                  |
|                    | Load cell Excitation                                                             | DC +5V                                                                   |
|                    | A/D Conversion Method                                                            | Sigma-Delta                                                              |
|                    | Decimal Point                                                                    | 0, 0.0, 0.00, 0.000                                                      |
|                    | Drift                                                                            | Offset                                                                   |
|                    |                                                                                  | Span                                                                     |
|                    | Linearity                                                                        | 0.001% of Full Scale                                                     |
|                    | Analogue Sampling(sec)                                                           | Max 60times / sec                                                        |
| Environment        | Operating Temperature Range                                                      | -10°C ~ +40°C [14°F ~ 104°F]                                             |
|                    | Operation Humidity Range                                                         | 40% ~ 85% RH, Non-condensing                                             |
| Function           | Calibration Mode                                                                 | Test Weight Calibration Mode<br>Simulation Calibration Mode              |
|                    | Display                                                                          | 6 digit, 15mm(0.6inch)<br>Red Color FND                                  |
|                    | Key Pad                                                                          | 5EA Standard Key pad                                                     |
|                    | Additional Digital Input                                                         | 4pcs external input key addable                                          |
| Communi-<br>cation | Standard Serial Interface<br>(RS-422/485)                                        | Data Transference<br>Command Mode<br>Serial Printer Mode<br>Modbus (RTU) |
|                    | Option Serial Interface<br>(RS-232C)                                             | Data Transference<br>Command Mode<br>Serial Printer Mode                 |
|                    | Analog Output (Option)                                                           | 0~10V, 4~20mA (Selectable)                                               |
| Power              | DC : 24V, Power Consumption 12W<br>AC (Option) : 110~220V, Power Consumption 12W |                                                                          |
| Size               | 96mm(W) x 96mm(H) x 116mm(D)                                                     | Weight : 500g (DC)<br>700g (AC.)                                         |

# SI 460C DIN SIZE WEIGHING INDICATOR

## 3-2. Front Panel

### 3-2-1 Front Panel (Display / Key Pad)



### 3-2-2. State LED

|               |                                        |
|---------------|----------------------------------------|
| <b>STEADY</b> | When the weight is "STEADY", ON.       |
| <b>ZERO</b>   | When the current weight is "ZERO", ON. |
| <b>TARE</b>   | "TARE" function is set, ON.            |
| <b>OUT1</b>   | When OUT1 (Relay) is operated, ON.     |
| <b>OUT2</b>   | When OUT2 (Relay) is operated, ON.     |
| <b>OUT3</b>   | When OUT3 (Relay) is operated, ON.     |
| <b>OUT4</b>   | When OUT4 (Relay) is operated, ON.     |

## SI 460C DIN SIZE WEIGHING INDICATOR

### 3-2-3. Key Operation

|                                                                                    |                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <ol style="list-style-type: none"> <li>1. Make weight value to Zero.</li> <li>2. Cancel or ESC.</li> </ol>                                                                                                                                                      |
|   | <ol style="list-style-type: none"> <li>1. Set the TARE Function<br/>1<sup>st</sup> input : "TARE", 2<sup>nd</sup> input : "TARE Reset"<br/>(When "HOLD" or weight value is ZERO, then this key doesn't work.)</li> <li>2. Moving the cursor to left.</li> </ol> |
|   | <ol style="list-style-type: none"> <li>1. Set the "HOLD" Function<br/>1<sup>st</sup> input : "HOLD", 2<sup>nd</sup> input : "HOLD Reset"<br/>※ When HOLD is on, "H" mark will be shown at the display.</li> <li>2. Moving the cursor to right.</li> </ol>       |
|   | <ol style="list-style-type: none"> <li>1. Print out</li> <li>2. Increase the value (</li> <li>4. Saving weight date under F-function 103-0,4,5,6</li> </ol>                                                                                                     |
|  | <ol style="list-style-type: none"> <li>1. Press this key 4 times, within 3 secs to enter "SET-UP" mode.</li> <li>2. Press during 4 secs to enter "Hidden Function"</li> <li>3. Saving data and move next step</li> </ol>                                        |

### 3-2-4. Hot key (F Key combination)

|                                                                                                                                                                                                                                                             |                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p>Continuous "TARE" setting<br/>(From the second TARE setting, use this key)</p>                                                           |
|    | <p>If the Printer is installed,<br/>You can print out the "Grand-total data".<br/>(GRAND-total data can be checked though Print output)</p> |

### Tip

Max accumulated weighing count : 999,999times

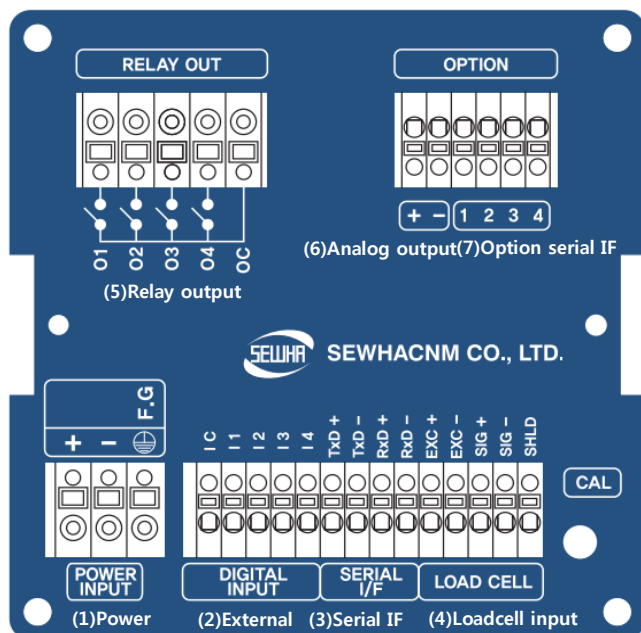
Over 999,999times → return to "0" time

Max accumulated weight display : 999999999 (g, kg, ton)

Over 999,999,999 (g, kg, ton) → return to "0" (g, kg, ton)

# SI 460C DIN SIZE WEIGHING INDICATOR

## 3-3 Rear Panel



1. Power DC IN: 24V (Power: 24V 1A recommended)
2. External Input terminal: Refer F-Function 231~234 to select each function.
3. Serial Interface terminal

| Communication      | TX+ Terminal | TX- Terminal | RX+ Terminal | RX- Terminal |
|--------------------|--------------|--------------|--------------|--------------|
| RS – 422(Standard) | TxD+         | TxD-         | RxD+         | RxD-         |
| RS – 485(Standard) | Not used     | Not used     | RxD +        | RxD-         |

### 4. Load cell Input

| Terminal  | EXC+ | EXC- | SIG+ | SIG- | SHLD   |
|-----------|------|------|------|------|--------|
| Load cell | EXC+ | EXC- | SIG+ | SIG- | SHEILD |

### 5. Relay output (Function 226~229, Relay COM terminal is common.)

| Terminal | O1    | O2    | O3    | O4    | OC    |
|----------|-------|-------|-------|-------|-------|
| Relay    | OUT 1 | OUT 2 | OUT 3 | OUT 4 | O COM |

### 6. Analog output

| Terminal | +   | -   | Note   |
|----------|-----|-----|--------|
| 4~20mA   | (+) | (-) | Option |
| 0~10V    | (+) | (-) | Option |

### 7. Option Serial Interface terminal (port No.2 top side)

| 단자        | 1        | 2        | 3    | 4    | Note   |
|-----------|----------|----------|------|------|--------|
| RS – 232C | GND      | GND      | Tx   | Rx   | Option |
| RS - 422  | TxD+     | TxD-     | RxD+ | RxD- | Option |
| RS - 485  | Not used | Not used | D+   | D-   | Option |

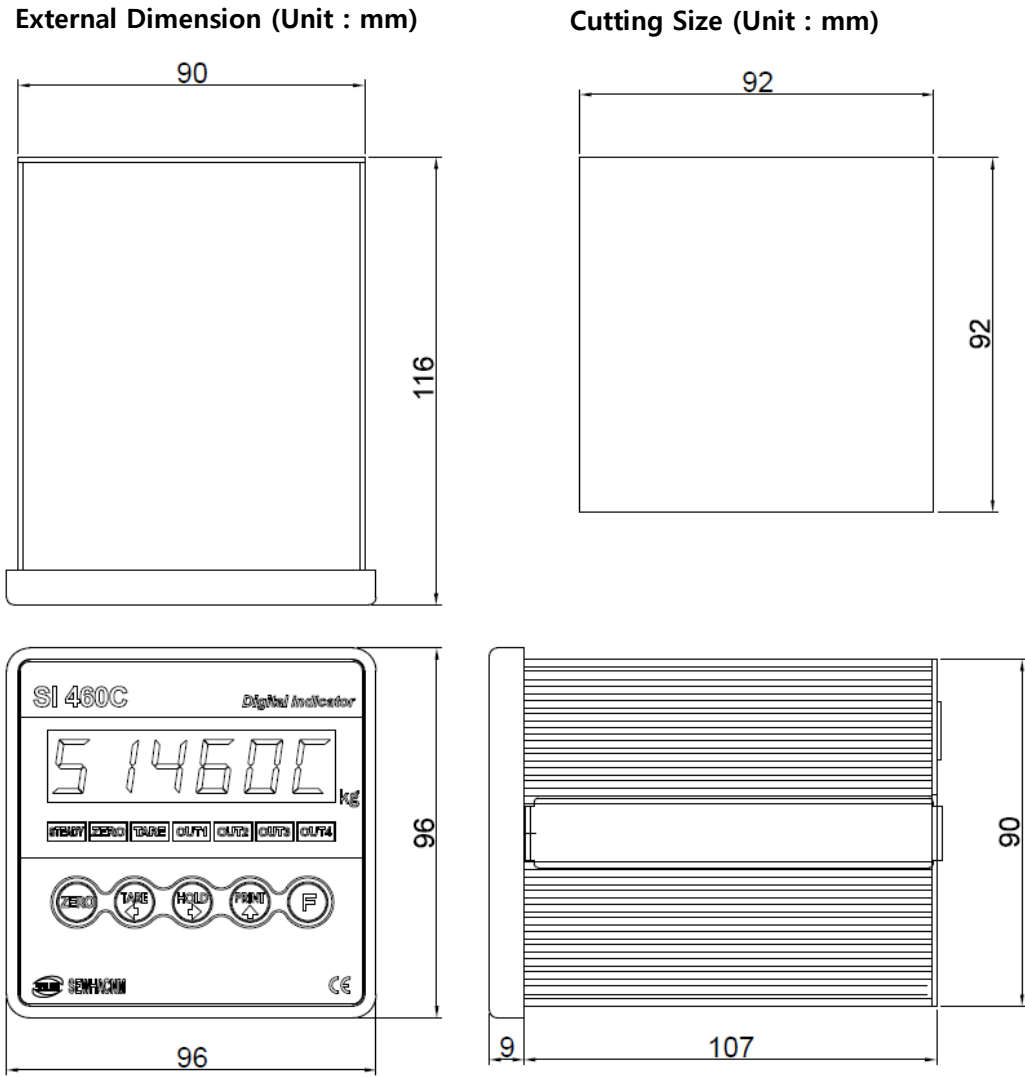


Please check the Comm. and other specification in the label, attached on the cover plate first, and make connection according to that information.



## 4. INSTALLATION

### 4-1. External Dimension & Cutting Size



### 4-2. Installation Components



SI 460A



User Manual

## SI 460C DIN SIZE WEIGHING INDICATOR

### 4-3 Load cell Installation

Load Cell Wire Connection (In case of SEWHACNM's Load cell)

It depends on the manufacturer of load cell, please check the specification.



**Caution** Under Set-up the Load cell, if EXC+ and EXC- have a short circuit, It may cause damage in the indicator.(specially analogue board)

If you connect other wires to Load cell terminal wrongly, it may cause damage in the analogue board.

Before connecting the load cell cable you have to power off and be sure to connect the cable to the terminal correctly.

Do not weld near the load cells , Indicators or other devices.

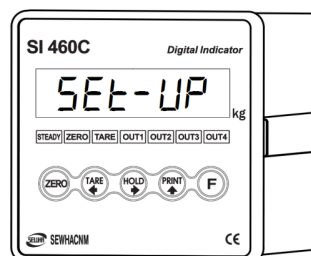
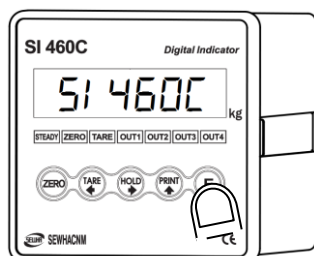
#### Load Cell Installation

1. You can connect Max 8pcs of same capacity Load cells at once. (350  $\Omega$ )
2. You have to make horizontal balance on the ground.
3. If you install more than 2pcs of load cells, use Summing box and adjust output signal difference as minimum. It can make wrong weighing process caused by each load cell's variation.
4. If there is some temperature difference around Load cell, it can cause wrong weight measurement.
5. Don't do Welding job or Arc discharge around installation place. But, there is no choice, please disconnect power cable and Load cell cable. If you measure static electricity material, please make earth between down part and up part of Load cell.

## 5. SET-UP

### 5-1. SET-UP Mode

#### 5-1-1. Enter to SET-UP Mode



Press  key 4 times.

If "SETUP" is displayed, SET-UP mode is ON.

#### ● Shortcut

| F-function Mode |                          | Press  key 4 times →                                                                                                |
|-----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Mode 1     | Analog Variation Value   | Press  key 4 times →  →     |
|                 | Display                  | Press  key 4 times →  →     |
|                 | Key                      | Press  key 4 times →  →     |
|                 | Analog Output            | Press  key 4 times →  →     |
| Test Mode 2     | External Input           | Press  key 4 times →  →      |
|                 | Relay Output             | Press  key 4 times →  →      |
|                 | Serial I/F               | Press  key 4 times →  → ? →  |
|                 | Serial I/F (Option Port) | Press  key 4 times →  → ? →  |

-  key for Cance / Back,  key for Save.

# SI 460C DIN SIZE WEIGHING INDICATOR

## 5-2. Test Weight Calibration Mode (Using test weight)

### 5-2-1. Calibration

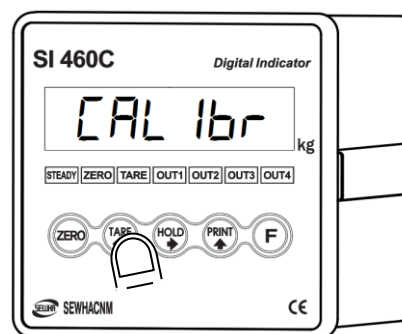
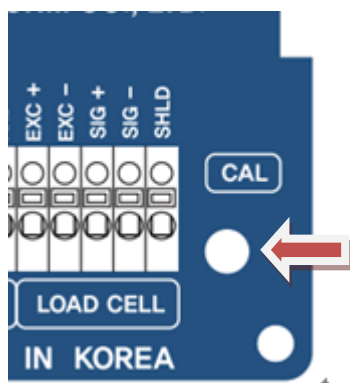
Adjust weight balance between "Real weight" on the load cell (Weight Part) and "Displayed weight of Indicator". When you replace LOAD CELL or Indicator, you have to Calibrate process once again.

(When you start calibration mode, TARE, HOLD & PRINT will be reset.)

 Before processing calibration, please warm up the indicator during 15 min to guarantee more preciseness.

| Calibration Key Operation                                                         |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |
| CANCEL/BACK                                                                       | Move to left                                                                      | Move to right                                                                     | Increase set value                                                                 | Save and Move to next step                                                          |

### 5-2-2. Start Test Weight Calibration Mode



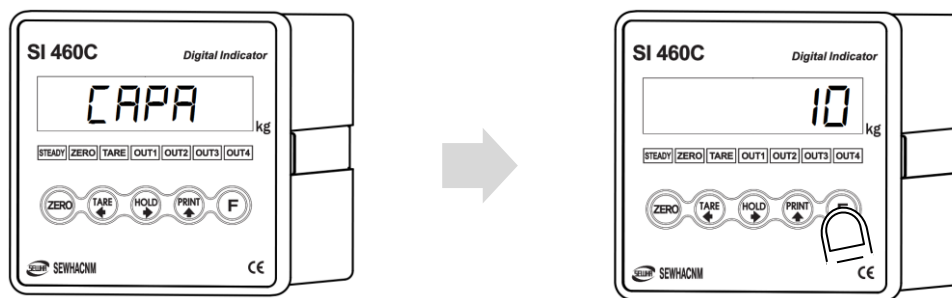
Remove "CAL-BOLT" on the Front panel, .  
and press "CAL - LOCK S/W" inside.

When "CALIBR" displays, press  key,  
Then Test Weight Calibration Mode starts.

※ If you set password through "F95", you have to input the pass word.

## SI 460C DIN SIZE WEIGHING INDICATOR

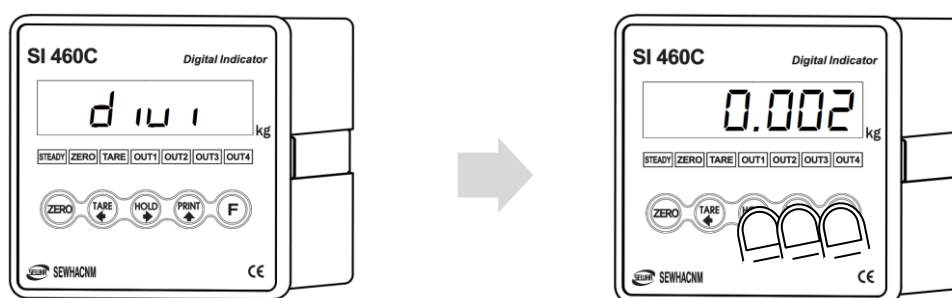
### 5-2-2. Setting "Capacity of weighing Scale"



After displaying "CAPA", input max capacity with keys & Press  key to save & move to next step.

**Tip** If you want to set Max capacity as 1,000kg and the division is 0.1 (100g), then just input "1000"..

### 5-2-3. "Decimal Point" and "Digit / Division" Value



After "DIVI" is displayed select Decimal point with  key.

Whenever pressing  key , decimal point will be changed.

Please stop at the optimal position. And select Division optimal division with  key.

Finally press  key to save and move to next step.

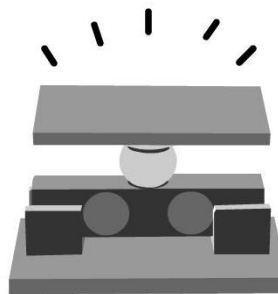
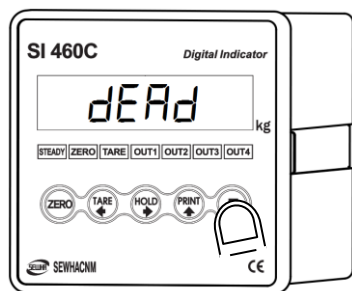
**Tip** Max decimal point will be 0.001, and digit can be selected among 1, 2, 5, 10, 20, 50. Digit and decimal point must be fulfilled under the below condition.

- (division value / Max capacity value) cannot be over 1/20,000.

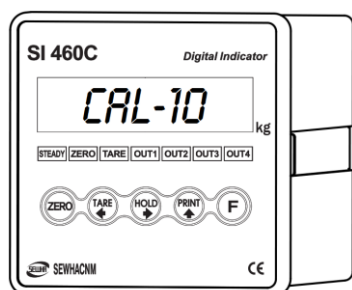
If this condition is not fulfilled, "Err-1" will be displayed and move back to capacity setting mode.

## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-2-4. Measuring the “DEAD” Weight of Weighing Scale.



When “DEAD” is displayed, Press  key, then indicator will calculate dead weight of scale part automatically (While this process, there should be nothing on the scale part.)



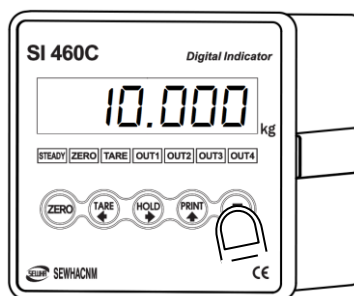
Indicator will search “DEAE weight” during 10~20 secs automatically to find the best condition.

※ Over than 1/10,000 resolution setting,

To guarantee the preciseness, DEAD weight calculation (CAL00~CAL09) will be operated twice.

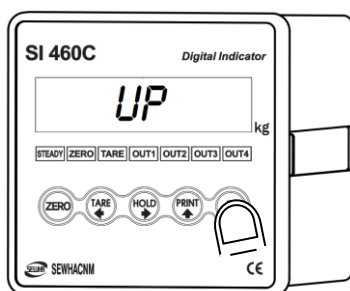
**Tip** In this step, if there is unstable condition such as some forces or Vibration on the scale part, “ErrorA” will be displayed, and “DEAD value” will not be calculated. Please remove the cause of the force or vibration and process it again.

### 5-2-5. Calculating span value

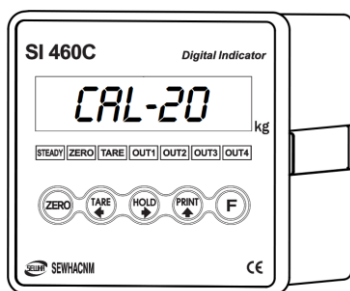


If “SPAN” is displayed, input the weight of your “Test Weight” and press  key.

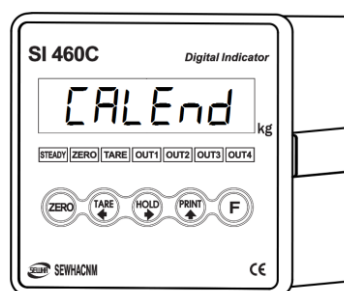
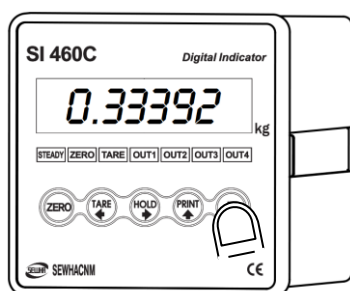
## SI 460C DIN SIZE WEIGHING INDICATOR



If "UP" is displayed, please load "Test Weight" on the scale part and press  key.



※ Over than 1/10,000 resolution setting,  
To guarantee the preciseness, Span calculation will be operated twice.



After calculation, span value will be displayed on the display. Then press  key.

When "CALEnd" is displayed and calibration is completed.

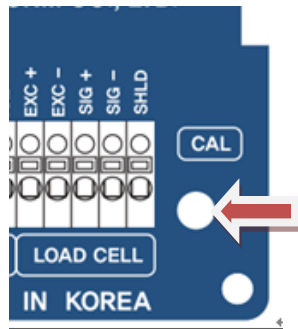
## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-3. Simulation Calibration Mode(Calibrate without Test weight)

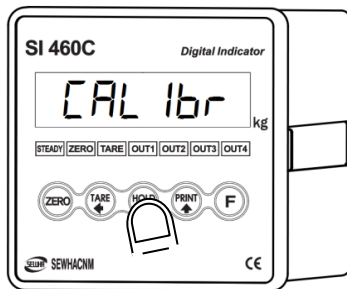
With this "Simulation Calibration Mode" you can make simple calibration without any "TEST weight". This calibration mode uses "Load cells' max capacity" and "Max Output Rate(mV)", so the weight adjustment degree might be less than "Test weight Calibration".

The guaranteed resolution of this "Simulation Calibration" is 1/3,000.

#### 5-3-1. Simulation Calibration Mode Start



Remove "CAL-BOLT" on the Front panel, and press "CAL - LOCK S/W" inside.



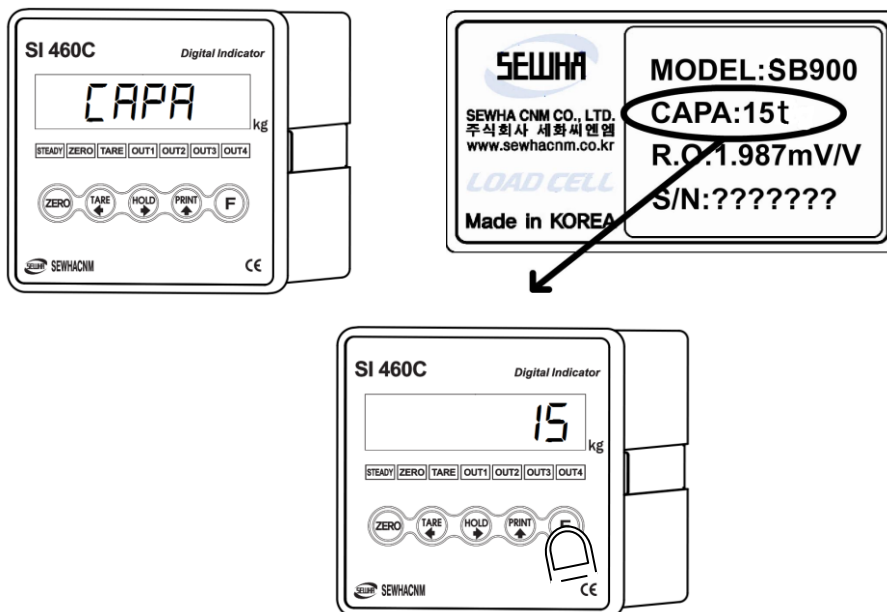
When "CALIBR" is displayed,

press  key.



## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-3-2. Setting "Capacity of Load Cell"



After "CAPA" displayed, Check Max Capacity of Load cell.  
(refer the load cell label, or Test Report)

Input the Max Capacity of Load cell. And press  key.

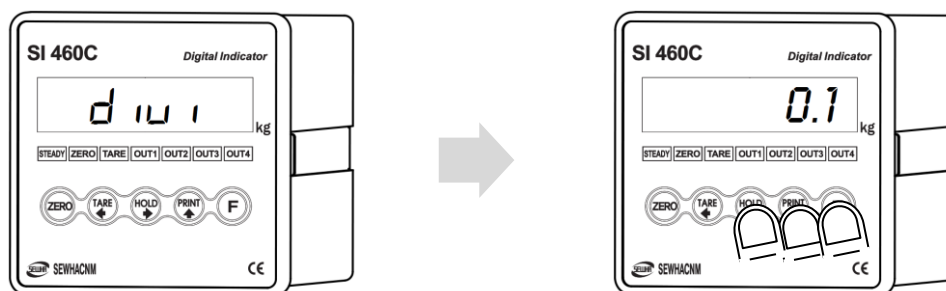
**Tip**

In case of multiple pieces of load cells are installed, Please make sum of each load cell's capacity and make setting with Max Capacity.

EX) There are 4pcs of load cells, and each load cell's Max capacity is 1,000kg.

Then, total Max Capacity will be 4,000kg(1,000 x 4) and you have to input 4,000.

### 5-3-3. Setting "Digit / Division" value

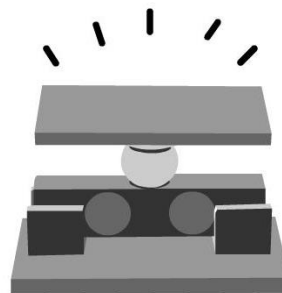
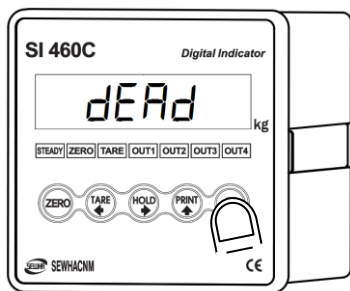


After "DIVI" is displayed select Decimal point with  key.

And select Division optimal division with  key. Press  key to save.

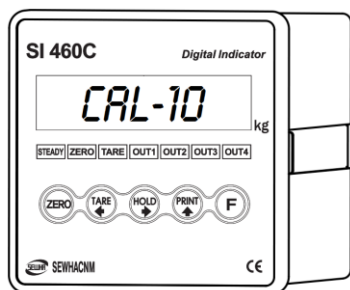
## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-3-4. Measuring the “DEAD Weight” of Weighing Scale.



When “DEAD” displays, Press  key, then indicator will calculate dead weight of scale part automatically.

(While this process, there should be nothing on the scale part.)

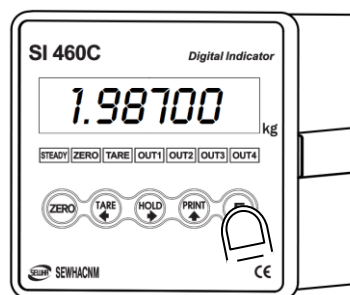
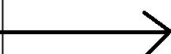
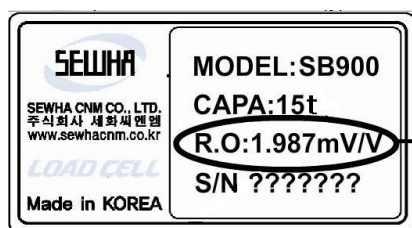


It takes 10secs or 20secs to find the best condition.

Over than 1/10,000 resolution setting,

To guarantee the preciseness, dead weight calculation will be operated twice.

### 5-3-5. Inputting Max Output ( Rated Output Voltage / mV)

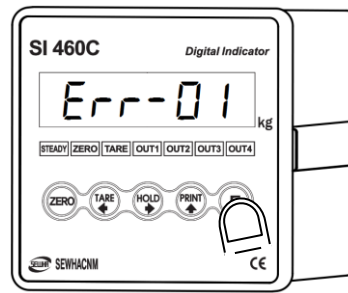


**Input the output value of load cell.**

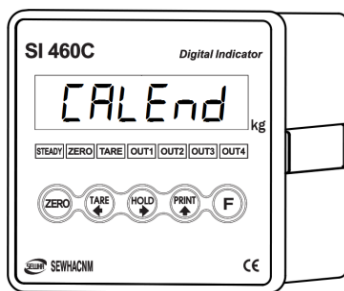
After “mV” displayed, Check the Rated output value of Load cell.

(Refer to the load cell label, or Test Report) . And Press  key to save and move to next step.

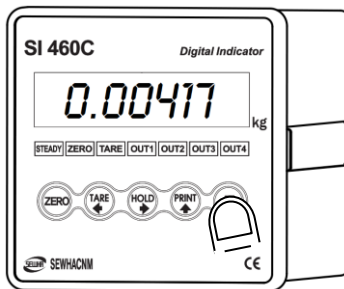
## SI 460C DIN SIZE WEIGHING INDICATOR



If input wrong value, there will display "Err-01", please go back to Setting "Capacity of Load Cell". After recheck the label of load cell and retry the process.



After finishing calculation, calculated "Span value" will be display with "CALEND"



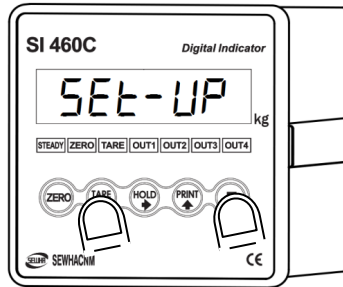
Now, the Simulation Calibration is done, press  key to complete the calibration process.

**Tip** In case of multiple pieces of load cells are connected, the rated output will be same as single load cell's. (Because plural load cells are connected with parallel connection, the sum of rated output voltage is same as single load cell's rated output)  
※Due to some variation between "**State output rate**" and "**Real Output rate**" of load cell, there might be some weight difference after finishing calibration.  
If you want to make more precise weighing process, please measure real output rate of load cell and input the measured value. Then the weight measurement will be more precise than before.

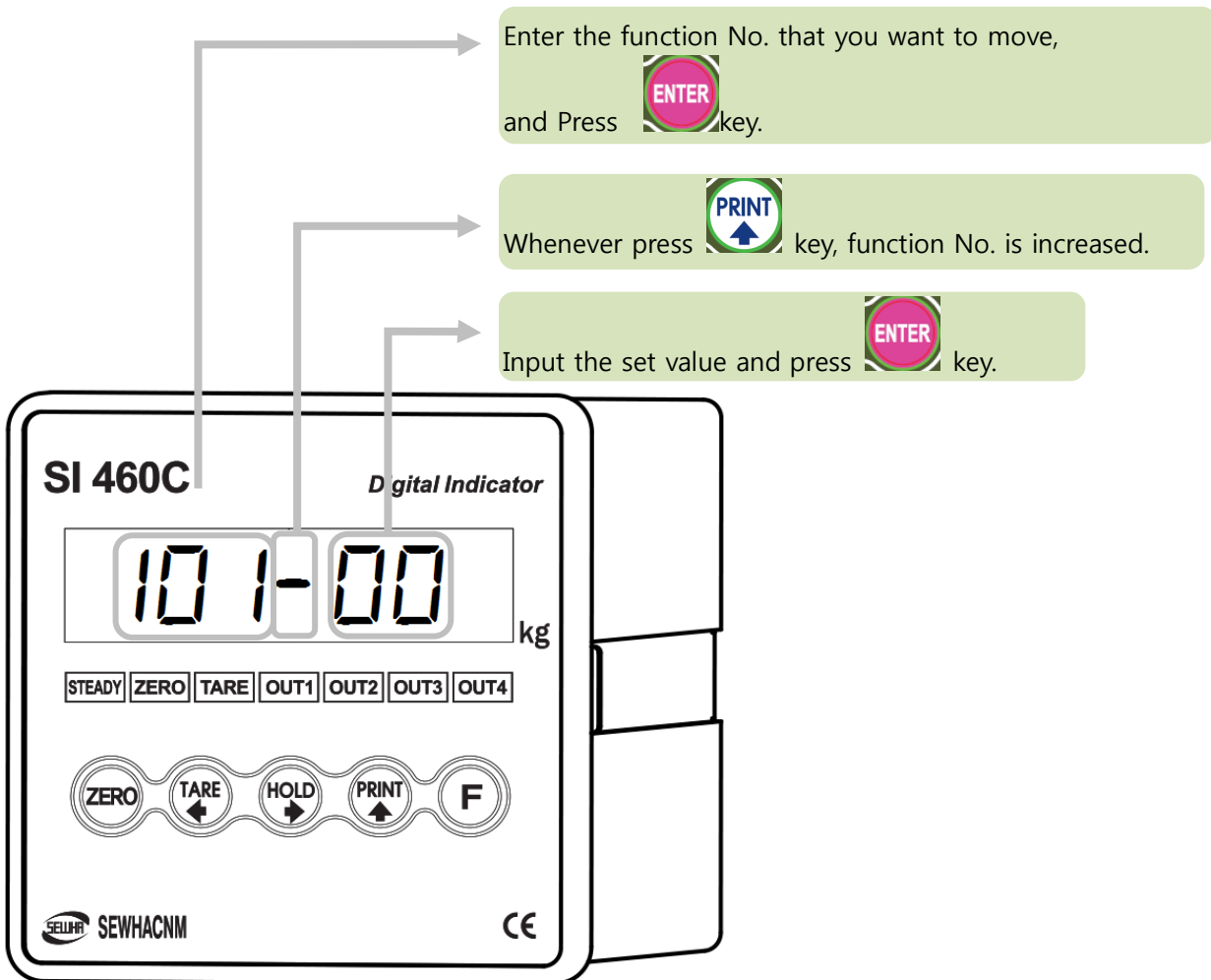
# SI 460C DIN SIZE WEIGHING INDICATOR

## 5-4. F-FUNCTION Setting

### 5-4-1. Starting F-FUNCTION Mode



Press  key 4 times → When "SETUP" is displayed, press  key.



## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-4-2. F-function list

| F-list | Subject                                      | Default | Contents                                                                                                                                                                                                                                                         |
|--------|----------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 101    | Equipment No. setting – ID No.setting        | 01      | 01~99                                                                                                                                                                                                                                                            |
| 102    | Weight-Back up Mode                          | 02      | 00:Normal mode<br>01: Weight Back up Mode(Zero)<br>02: Weight Back up Mode(Zero&Tare)                                                                                                                                                                            |
| 103    | Weighing Data Save Method<br>(Refer page 26) | 03      | 00: Manual: Whenever "Print" key input<br>01: Auto: At every steady states<br>02: Auto: At the first steady states<br>04: Manual& Auto: At every steady states<br>05:Manual& Auto: At the first steady states<br>06: Manual& Auto: After finish weighing         |
| 104    | Display Up-Date Speed                        | 09      | 01:Slow(1time per 1sec)<br>~ 09:Fast(60times per 1sec)                                                                                                                                                                                                           |
| 108    | Buzzer sound (External input detection)      | 00      | 00:Buzzer sound, 01:No Buzzer sound                                                                                                                                                                                                                              |
| 110    | Weight Unit                                  | 00      | 00:kg, 01:g, 02:ton                                                                                                                                                                                                                                              |
| 111    | Language                                     | 00      | 00:Korean, 01:English                                                                                                                                                                                                                                            |
| 201    | EMPTY Range                                  | 100     | 00~999999                                                                                                                                                                                                                                                        |
| 202    | Auto Zero Range                              | 00      | 00~99 (Unit:0.25gradation)                                                                                                                                                                                                                                       |
| 203    | Steady Range                                 | 08      | 01~99 (Unit:0.25gradation)                                                                                                                                                                                                                                       |
| 204    | Steady condition check time                  | 10      | 01~99 (Unit:0.1sec.)                                                                                                                                                                                                                                             |
| 205    | Digital Filter                               | 20      | 01:Weak vibration ~ 99:Strong vibration                                                                                                                                                                                                                          |
| 206    | Zero key operation mode                      | 00      | 00:Always active<br>01:Active under steady condition only                                                                                                                                                                                                        |
| 207    | Tare Key operation mode                      | 00      | 00:Always active<br>01:Active under steady condition only                                                                                                                                                                                                        |
| 209    | Zero key Operation Range                     | 02      | 00: Active within 2% of Max Capacity<br>01: Active within 5% of Max Capacity<br>02: Active within 10% of Max Capacity<br>03: Active within 20% of Max Capacity<br>04: Active within 50% of Max Capacity<br>05: Active within 100% of Max Capacity<br>06:No limit |

## SI 460C DIN SIZE WEIGHING INDICATOR

|            |                                             |    |                                                                                                                                                                   |
|------------|---------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>210</b> | Tare key Operation Range                    | 02 | 00: Active within 10% of Max Capacity<br>01: Active within 20% of Max Capacity<br>02: Active within 50% of Max Capacity<br>03: Active within 100% of Max Capacity |
| <b>211</b> | Auto Zero function under Tare state         | 00 | 00:Disuse, 01:Use                                                                                                                                                 |
| <b>212</b> | Tare Delay Time                             | 00 | 00:Disuse, 01 ~ 10:Use (Unit:1sec.)                                                                                                                               |
| <b>213</b> | Auto tare set when weighing starts          | 00 | 00:Disuse, 01:Use                                                                                                                                                 |
| <b>214</b> | Tare Removal Time                           | 00 | 00:Manual (Tare key)<br>01:Auto (Under near zero range)<br>02:Auto (At the steady condition)<br>03: Auto (After T1 –Function 239)                                 |
| <b>215</b> | Auto Tare Removal Time                      | 00 | 00 : Disuse<br>01 ~ 09 : Use (Unit : 1 sec)                                                                                                                       |
| <b>216</b> | Hold Mode                                   | 00 | 00:Sample Hold, 01:Peak Hold,<br>02:Average Hold                                                                                                                  |
| <b>217</b> | Hold Delay Time                             | 00 | 00:Disuse, 01~10:Use (Unit:1sec.)                                                                                                                                 |
| <b>218</b> | Hold Removal at the near zero               | 00 | 00:Disuse, 01:Use                                                                                                                                                 |
| <b>219</b> | Auto Hold Removal Time                      | 00 | 00:Disuse, 01~10:Use (Unit:1sec.)                                                                                                                                 |
| <b>220</b> | Average Hold Time                           | 10 | 01 ~ 99 (Unit:0.1sec.)                                                                                                                                            |
| <b>221</b> | Minus (-) Mark Display                      | 00 | 00:Use 01:Disuse                                                                                                                                                  |
| <b>222</b> | Under UNPASS/OVERLOAD state, Weight display | 00 | 00:Display, 01:No display                                                                                                                                         |
| <b>223</b> | Weighing Mode                               | 01 | 00:Disuse 01:Limit Mode1<br>02:Limit Mode2 03:Limit Mode3<br>04:Packer Mode1 05:Packer Mode2<br>06:Packer Mode3 07:Accumulating Mode1<br>08:Accumulating Mode2    |
| <b>224</b> | Relay Control Type                          | 00 | 00:Minus&Plus weight Control<br>01: Plus weight Control                                                                                                           |
| <b>225</b> | Relay Output Auto / Manual Setting          | 00 | 00:Auto., 01:Manual(User custom)                                                                                                                                  |
| <b>226</b> | Relay Output 1 Setting                      | 00 | 00:Disuse 01:Near Zero 02:SP1 03:SP2<br>04:SP3 05:SP4                                                                                                             |
| <b>227</b> | Relay Output 2 Setting                      | 00 | 00:Disuse 01:Near Zero 02:SP1 03:SP2<br>04:SP3 05:SP4                                                                                                             |

## SI 460C DIN SIZE WEIGHING INDICATOR

|            |                                              |    |                                                                                                                                                                                                                               |
|------------|----------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>228</b> | Relay Output 3 Setting                       | 00 | 00:Disuse 01:Near Zero 02:SP1 03:SP2<br>04:SP3 05:SP4                                                                                                                                                                         |
| <b>229</b> | Relay Output 4 Setting                       | 00 | 00:Disuse 01:Near Zero 02:SP1 03:SP2<br>04:SP3 05:SP4                                                                                                                                                                         |
| <b>233</b> | External Input 1 Setting                     | 01 | 00:Disuse 01:Zero 02:Tare 03:Tare removal<br>04:Tare/Tare removal 05:Hold<br>06:Hold removal 07:Hold/Hold removal<br>08:Start(Packer Mode) 09:Stop(Packer<br>Mode) 10:Start/Stop(Packer Mod) 11:Print<br>12:Grand total Print |
| <b>234</b> | External Input 2 Setting                     | 04 | 00:Disuse 01:Zero 02:Tare 03:Tare removal<br>04:Tare/Tare removal 05:Hold<br>06:Hold removal 07:Hold/Hold removal<br>08:Start(Packer Mode) 09:Stop(Packer<br>Mode) 10:Start/Stop(Packer Mod) 11:Print<br>12:Grand total Print |
| <b>235</b> | External Input 3 Setting                     | 07 | 00:Disuse 01:Zero 02:Tare 03:Tare removal<br>04:Tare/Tare removal 05:Hold<br>06:Hold removal 07:Hold/Hold removal<br>08:Start(Packer Mode) 09:Stop(Packer<br>Mode) 10:Start/Stop(Packer Mod) 11:Print<br>12:Grand total Print |
| <b>236</b> | External Input 4 Setting                     | 11 | 00:Disuse 01:Zero 02:Tare 03:Tare removal<br>04:Tare/Tare removal 05:Hold<br>06:Hold removal 07:Hold/Hold removal<br>08:Start(Packer Mode) 09:Stop(Packer<br>Mode) 10:Start/Stop(Packer Mod) 11:Print<br>12:Grand total Print |
| <b>239</b> | Finish Relay Output Delay Time (T1)          | 10 | 00 ~ 99 (Unit:0.1sec.)                                                                                                                                                                                                        |
| <b>240</b> | Finish Relay Output Time (T2)                | 10 | 00 ~ 99 (Unit:0.1sec.)                                                                                                                                                                                                        |
| <b>251</b> | Zero state lamp output standard              | 00 | 00 : Near Zero<br>01 : Zero                                                                                                                                                                                                   |
| <b>253</b> | Near zero output Setting Under tare ON state | 00 | 00:Zero Output<br>01:Actual zero output except Tare weight                                                                                                                                                                    |

## SI 460C DIN SIZE WEIGHING INDICATOR

|            |                                           |    |                                                                                                                                                                                                                           |
|------------|-------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>301</b> | Parity / Stop bit                         | 00 | 00:Databit 8, Stopbit 1, Paritybit Non<br>01:Databit 8, Stopbit 1, Paritybit Odd<br>02:Databit 8, Stopbit 1, Paritybit Even<br>03:Databit 7, Stopbit 1, Paritybit Odd<br>04:Databit 7, Stopbit 1, Paritybit Even          |
| <b>302</b> | Serial Communication Speed                | 02 | 00: 2,400bps 01: 4,800bps 02: 9,600bps 03:<br>14,400bps 04: 19,200bps<br>05: 28,800bps 06: 38,400bps<br>07: 57,600bps 08: 76,800bps<br>09: 1115,200bps                                                                    |
| <b>303</b> | Data transmission mode                    | 00 | 00:Simplex / Stream Mode<br>01:Duplex / Command Mode<br>02:Print Mode<br>03:Modbus(RTU)                                                                                                                                   |
| <b>304</b> | "Check-Sum" under command mode            | 00 | 00:Disuse, 01:Use                                                                                                                                                                                                         |
| <b>305</b> | Data Format under Stream Mode             | 00 | 00:Format1(19byte) 01:Format2(22byte)<br>02:Format3(17byte) 03:Format4(22byte)                                                                                                                                            |
| <b>306</b> | Date transference under stream mode       | 00 | 00:Continuously<br>01:Single time on every steady state<br>02:Single time at the first steady point<br>03:Single time output after weighing finish<br>04:When input F key                                                 |
| <b>307</b> | Modbus Transmit Data MSB/LSB location     | 00 | 00:Standard, 01:Change                                                                                                                                                                                                    |
| <b>308</b> | Parity / Stop bit (Serial Port2)          | 00 | 00: Data bit8, Stop bit1, Parity bit Non<br>01: Data bit8, Stop bit1, Parity bit Odd<br>02: Data bit8, Stop bit1, Parity bit Even<br>03: Data bit7, Stop bit1, Parity bit Non<br>04: Data bit7, Stop bit, Parity bit Even |
| <b>309</b> | Serial Communication Speed (Serial Port2) | 02 | 00: 2,400bps 01: 4,800bps 02: 9,600bps 03:<br>14,400bps 04: 19,200bps<br>05: 28,800bps 06: 38,400bps<br>07: 57,600bps 08: 76,800bps<br>09: 1115,200bps                                                                    |
| <b>310</b> | Data transmission mode (Serial Port2)     | 02 | 00:Simplex / Stream Mode<br>01:Duplex / Command Mode<br>02:Print Mode                                                                                                                                                     |



## SI 460C DIN SIZE WEIGHING INDICATOR

|     |                                                             |    |                                                                                                                                                                           |
|-----|-------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 311 | "Check-Sum" under command mode (Serial Port2)               | 00 | 00: Disuse, 01: Use                                                                                                                                                       |
| 312 | Data Format under Stream Mode (Serial Port2)                | 00 | 00:Format1, 01:Format2, 02:Format3<br>03:Format4 04:Format5                                                                                                               |
| 313 | Date transference under stream mode (Serial Port2)          | 00 | 00:Continuously<br>01:Single time on every steady state<br>02:Single time at the first steady point<br>03:Single time output after weighing finish<br>04:When input F key |
| 352 | Print Format Setting                                        | 00 | 00: Continuous Print, 01: Single Print                                                                                                                                    |
| 354 | Print Output Delay Time Setting                             | 00 | 00~09 (Unit:1sec.)                                                                                                                                                        |
| 355 | Paper Withdraw Rate setting (After Continuous/Single Print) | 00 | 00~09 (Unit:1line add)                                                                                                                                                    |
| 356 | Paper Withdraw Rate setting (After SUB/GRAND Total Print)   | 00 | 00~09 (Unit:1line add)                                                                                                                                                    |
| 358 | Deleting Grand total data after printing out                | 00 | 00:Delete 01:No delete                                                                                                                                                    |
| 401 | Analog Output Applying Weight Range Setting                 | 00 | 00: Absolute number(-&+)<br>01: Positive number(only +)                                                                                                                   |
| 402 | Analog Output Direction Setting                             | 00 | 00:Forward 01:Reverse                                                                                                                                                     |
| 403 | Analog Output Standard Setting                              | 00 | 00:CAPACITY 01:SP1 02:SP2 03:SP3 04:SP4<br>05:CAPACITY(Gross weight under Tare)                                                                                           |

### 5-4-3. F-function list - Specification

| Equipment No. setting               |    |         |                                                 |
|-------------------------------------|----|---------|-------------------------------------------------|
| 101                                 | 01 | 01 ~ 99 | ID No. setting with No. key. (01~99 selectable) |
| Weighing Data Save Method selection |    |         |                                                 |
| 102                                 |    | 00      | Normal mode                                     |
|                                     |    | 01      | Weight Back up Mode(Zero)                       |
|                                     | ●  | 02      | Weight Back up Mode(Zero&Tare)                  |
| Weighing Data Save Method           |    |         |                                                 |
| 103                                 | ●  | 00      | Manual(Whenever "Print" key input)              |
|                                     |    | 01      | Auto(At every steady states)                    |
|                                     |    | 02      | Auto(At the first steady states)                |
|                                     |    | 03      | Auto(At weighing process finish)                |
|                                     |    | 04      | Manual& Auto(At every steady states)            |
|                                     |    | 05      | Manual& Auto (At the first steady states)       |
|                                     |    | 06      | Manual& Auto(At weighing process finish)        |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Display Up-Date Speed                   |     |                  |                                                                                                                                                                                                                      |
|-----------------------------------------|-----|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 104                                     | 09  | 01 ~ 09          | 01: Slow(1 time per 1 sec) ~ 09: Fast(60 times per 1 sec)                                                                                                                                                            |
| Buzzer sound (External input detection) |     |                  |                                                                                                                                                                                                                      |
| 108                                     | ●   | 00               | Buzzer sound                                                                                                                                                                                                         |
|                                         |     | 01               | No Buzzer sound                                                                                                                                                                                                      |
| Weight Unit                             |     |                  |                                                                                                                                                                                                                      |
| 110                                     | ●   | 00               | kg                                                                                                                                                                                                                   |
|                                         |     | 01               | g                                                                                                                                                                                                                    |
|                                         |     | 02               | ton                                                                                                                                                                                                                  |
| Language for print bill                 |     |                  |                                                                                                                                                                                                                      |
| 111                                     | ●   | 00               | KOREAN                                                                                                                                                                                                               |
|                                         |     | 01               | ENGLISH                                                                                                                                                                                                              |
| EMPTY Range                             |     |                  |                                                                                                                                                                                                                      |
| 201                                     | 100 | 0<br>~<br>999999 | You can set "EMPTY" Range.                                                                                                                                                                                           |
| Auto Zero Range                         |     |                  |                                                                                                                                                                                                                      |
| 202                                     | 00  | 00 ~ 99          | Within the "Auto Zero" range, weighing part is steady, indicator will display current weight as "Zero" If the weighing part is not "Steady", indicator will display current weight. (Unit:0.25 gradation)            |
| Steady Range                            |     |                  |                                                                                                                                                                                                                      |
| 203                                     | 08  | 01 ~ 99          | During the set time period, estimate weighing part's "STEADY" condition and display. (Unit: 0.25 gradation)                                                                                                          |
| "STEADY" condition check time           |     |                  |                                                                                                                                                                                                                      |
| 204                                     | 10  | 01 ~ 99          | During the set time period, estimate weighing part's "STEADY" condition and display. If you set small value, indicator will take "STEADY" fast, if you set value, indicator will take "STEADY" slow. (Unit: 0.1 sec) |
| Digital Filter                          |     |                  |                                                                                                                                                                                                                      |
| 205                                     | 20  | 01 ~ 99          | 01:Weak vibration ~ 99:Strong vibration                                                                                                                                                                              |
| Zero key operation                      |     |                  |                                                                                                                                                                                                                      |
| 206                                     | ●   | 00               | Always active                                                                                                                                                                                                        |
|                                         |     | 01               | Active under steady condition only                                                                                                                                                                                   |
| Tare Key operation                      |     |                  |                                                                                                                                                                                                                      |
| 207                                     | ●   | 00               | Always active                                                                                                                                                                                                        |
|                                         |     | 01               | Active under steady condition only                                                                                                                                                                                   |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Zero key Operation Range                                                                                                                                                                                                |    |         |                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------|----------------------------------------------------------|
| 209                                                                                                                                                                                                                     |    | 00      | Active within 2% of Max Capacity                         |
|                                                                                                                                                                                                                         |    | 01      | Active within 5% of Max Capacity                         |
|                                                                                                                                                                                                                         | ●  | 02      | Active within 10% of Max Capacity                        |
|                                                                                                                                                                                                                         |    | 03      | Active within 20% of Max Capacity                        |
|                                                                                                                                                                                                                         |    | 04      | Active within 50% of Max Capacity                        |
|                                                                                                                                                                                                                         |    | 05      | Active within 100% of Max Capacity                       |
|                                                                                                                                                                                                                         |    | 06      | No limit                                                 |
| ※ CAUTION: If setting over than 10%, The display weight could be over than Load cell input signal or Max Capacity and it may display “CELL-Err” or incorrect weight value. And It can be the cause of load cell damage. |    |         |                                                          |
| Tare key Operation Range                                                                                                                                                                                                |    |         |                                                          |
| 210                                                                                                                                                                                                                     |    | 00      | Active within 10% of Max Capacity                        |
|                                                                                                                                                                                                                         |    | 01      | Active within 20% of Max Capacity                        |
|                                                                                                                                                                                                                         | ●  | 02      | Active within 50% of Max Capacity                        |
|                                                                                                                                                                                                                         |    | 03      | Active within 100% of Max Capacity                       |
| Auto Zero function under Tare state                                                                                                                                                                                     |    |         |                                                          |
| 211                                                                                                                                                                                                                     | ●  | 00      | Disuse                                                   |
|                                                                                                                                                                                                                         |    | 01      | Use                                                      |
| Tare Delay Time                                                                                                                                                                                                         |    |         |                                                          |
| 212                                                                                                                                                                                                                     | 00 | 00 ~ 10 | 00: Disuse                                               |
|                                                                                                                                                                                                                         |    |         | 01 ~ 10: Use(Unit: 1 sec)                                |
| Auto tare set when weighing starts                                                                                                                                                                                      |    |         |                                                          |
| 213                                                                                                                                                                                                                     | ●  | 00      | Disuse                                                   |
|                                                                                                                                                                                                                         |    | 01      | Use                                                      |
| Tare Removal Timing                                                                                                                                                                                                     |    |         |                                                          |
| 214                                                                                                                                                                                                                     | ●  | 00      | Manual                                                   |
|                                                                                                                                                                                                                         |    | 01      | Auto at empty range                                      |
|                                                                                                                                                                                                                         |    | 02      | Auto at steady condition                                 |
| Auto Tare Removal Time                                                                                                                                                                                                  |    |         |                                                          |
| 215                                                                                                                                                                                                                     | 00 | 00 ~ 09 | Set time to tare removal                                 |
|                                                                                                                                                                                                                         |    |         | 00: Disuse<br>01 ~ 09: Use (Unit : 1 sec)                |
| Hold mode                                                                                                                                                                                                               |    |         |                                                          |
| 216                                                                                                                                                                                                                     | ●  | 00      | Sample Hold: Hold current weight until “Hold Reset”      |
|                                                                                                                                                                                                                         |    | 01      | Peak Hold: Measure Max weight value and hold on display. |
|                                                                                                                                                                                                                         |    | 02      | Average Hold: Hold average value                         |

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| Hold delay time                             |    |         |                                                             |
|---------------------------------------------|----|---------|-------------------------------------------------------------|
| 217                                         | 00 | 00 ~ 10 | 00: Disuse<br>01 ~ 10: Use(Unit: 1 sec)                     |
| Hold Removal at the near zero               |    |         |                                                             |
| 218                                         | ●  | 00      | Disuse                                                      |
|                                             |    | 01      | Use                                                         |
| Auto Hold Removal Time                      |    |         |                                                             |
| 219                                         | 00 | 00 ~ 10 | 00: Disuse<br>01 ~ 10: Use(Unit: 1 sec)                     |
| Average Hold Time                           |    |         |                                                             |
| 220                                         | 10 | 01 ~ 99 | Unit: 0.1 sec                                               |
| Minus (-) Mark Display                      |    |         |                                                             |
| 221                                         | ●  | 00      | Display                                                     |
|                                             |    | 01      | No display                                                  |
| Under UNPASS/OVERLOAD state, Weight display |    |         |                                                             |
| 222                                         | ●  | 00      | Display                                                     |
|                                             |    | 01      | No display                                                  |
| Weighing Mode Selection                     |    |         |                                                             |
| 223                                         |    | 00      | Disuse                                                      |
|                                             | ●  | 01      | Limit Mode 1: SP1 / SP2 / SP3 / Empty Output Setting        |
|                                             |    | 02      | Limit Mode 2: SP1 / SP2 / SP3 / SP4 Output Setting "A" dry  |
|                                             |    | 03      | Limit Mode 3: SP1 / SP2 / SP3 / SP4 Output Setting "B" dry  |
|                                             |    | 04      | Packer Mode 1: Target / SP1 / Finish / Empty Output Setting |
|                                             |    | 05      | Packer Mode 2: Target / SP2 / SP3 / Finish Output Setting   |
|                                             |    | 06      | Packer Mode 3: Target / SP2 / SP3 / Empty Output Setting    |
|                                             |    | 07      | Accumulating Mode1: SP1 / SP2 / SP3 / Finish Output setting |
|                                             |    | 08      | Accumulating Mode2: SP1 / SP2 / SP3 / SP4 Output setting    |

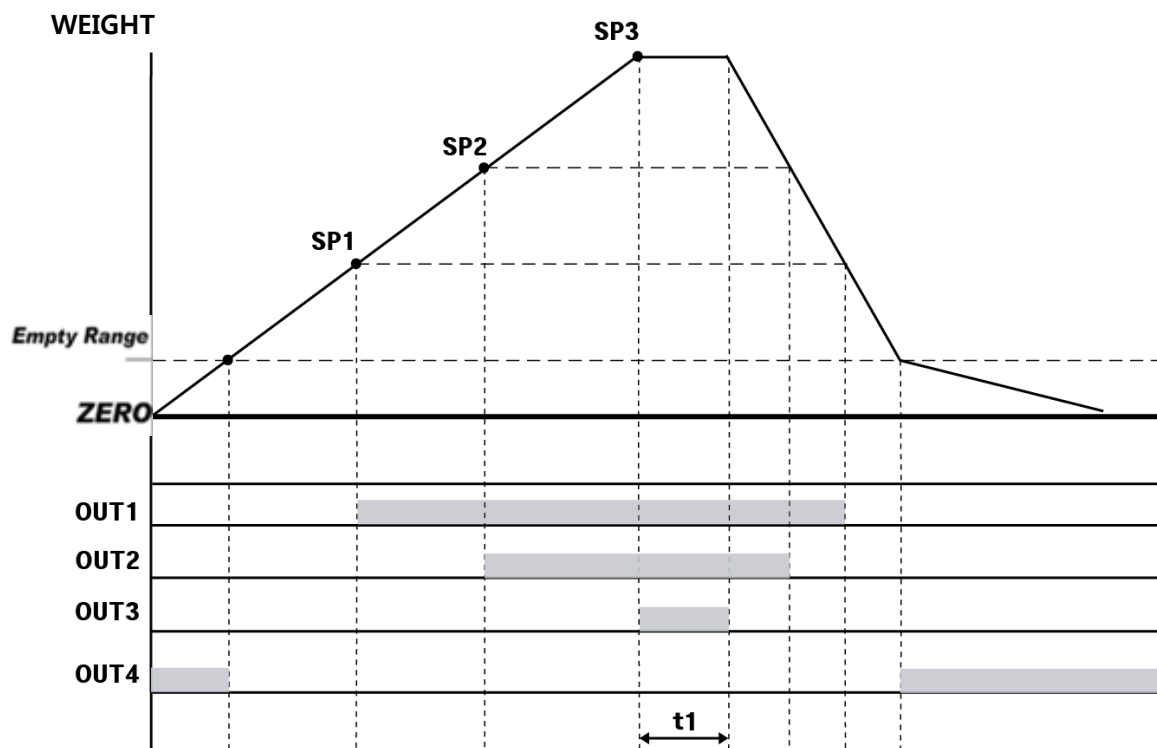
## SI 460C DIN SIZE WEIGHING INDICATOR

### ◆ Weighing Data Saving time point and print

| Weighing Data Save Method<br>(F-function 103) |                                          | Print input<br>(Key,<br>Communication,<br>External input) | Printing out data    | Saving Data    |
|-----------------------------------------------|------------------------------------------|-----------------------------------------------------------|----------------------|----------------|
| 00                                            | Manual                                   | ○                                                         | Current weight       | Current weight |
|                                               |                                          | X                                                         | X                    | X              |
| 01                                            | Auto: At every steady states             | ○                                                         | Recent stable weight | X              |
|                                               |                                          | X                                                         | Steady weight        | Steady weight  |
| 02                                            | Auto: At the first steady states         | ○                                                         | Recent stable weight | X              |
|                                               |                                          | X                                                         | Steady weight        | Steady weight  |
| 03                                            | Manual& Auto: At every steady states     | ○                                                         | Recent stable weight | X              |
|                                               |                                          | X                                                         | Finish weight        | Finish weight  |
| 04                                            | Manual& Auto: At the first steady states | ○                                                         | Current weight       | Current weight |
|                                               |                                          | X                                                         | Steady weight        | Steady weight  |
| 05                                            | Manual                                   | ○                                                         | Current weight       | Current weight |
|                                               |                                          | X                                                         | Steady weight        | Steady weight  |
| 06                                            | Auto: At every steady states             | ○                                                         | Current weight       | Current weight |
|                                               |                                          | X                                                         | Finish weight        | Finish weight  |

## SI 460C DIN SIZE WEIGHING INDICATOR

### ◆ Weighing Mode 1 – Limit mode 1 (Function223 – 01)



### Time Setting

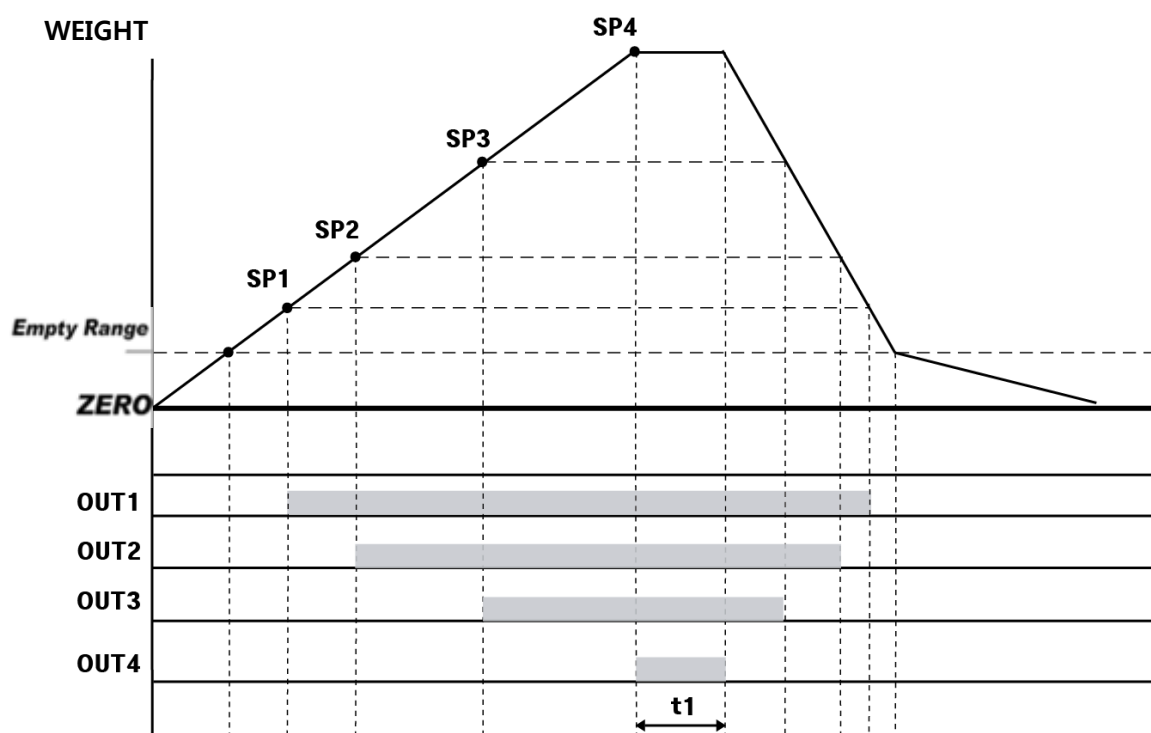
| Time  | Content                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------------------------------|
| $t_1$ | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after $t_1$ time. |

### Relay Output

| Relay | Contents                                                       | Relay | Contents                                                       |
|-------|----------------------------------------------------------------|-------|----------------------------------------------------------------|
| OUT 1 | Current weight $\geq$ SP1 (ON)<br>Current weight $<$ SP1 (OFF) | OUT 2 | Current weight $\geq$ SP2 (ON)<br>Current weight $<$ SP2 (OFF) |
| OUT 3 | Current weight $\geq$ SP3 (ON)<br>Current weight $<$ SP3 (OFF) | OUT 4 | Within "EMPTY" range "ON"<br>(Refer Function 201)              |

## SI 460C DIN SIZE WEIGHING INDICATOR

◆ Weighing Mode 2 – Limit Mode 2 (Function223 – 02) – Relay “ON” when weight reaches set value. “A” dry



### Time Setting

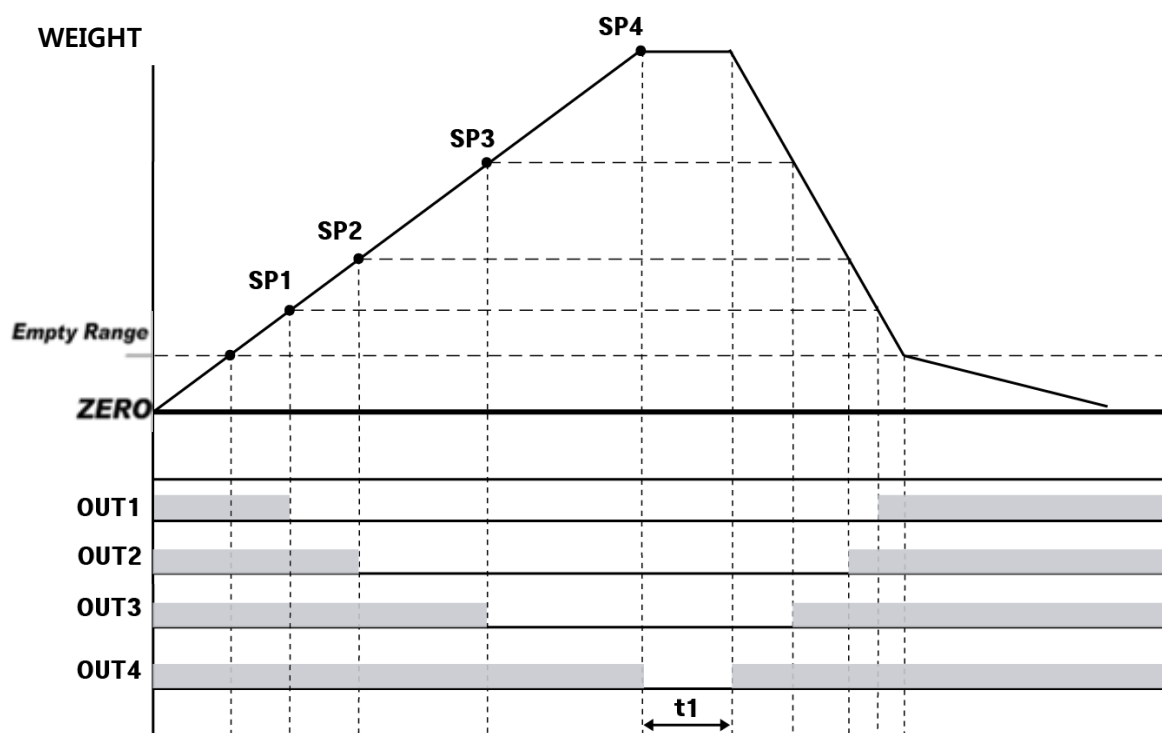
| Time | Content                                                                                                            |
|------|--------------------------------------------------------------------------------------------------------------------|
| t1   | Finish Relay Output Delay Time (F239)<br>In case of Function 103-3 or 103-6, save the weighing data after t1 time. |

### Relay Output

| Relay | Contents                                                       | Relay | Contents                                                       |
|-------|----------------------------------------------------------------|-------|----------------------------------------------------------------|
| OUT 1 | Current weight $\geq$ SP1 (ON)<br>Current weight $<$ SP1 (OFF) | OUT 2 | Current weight $\geq$ SP2 (ON)<br>Current weight $<$ SP2 (OFF) |
| OUT 3 | Current weight $\geq$ SP3 (ON)<br>Current weight $<$ SP3 (OFF) | OUT 4 | Current weight $\geq$ SP4 (ON)<br>Current weight $<$ SP4 (OFF) |

## SI 460C DIN SIZE WEIGHING INDICATOR

◆ Weighing Mode 3 – Limit Mode 3 (Function223 – 03) – Relay “ON” when weight reaches set value. “B” dry



$t_1$  set

| Time  | Content                                                                                                               |
|-------|-----------------------------------------------------------------------------------------------------------------------|
| $t_1$ | Finish Relay Output Delay Time (F239)<br>In case of Function 103-3 or 103-6, save the weighing data after $t_1$ time. |

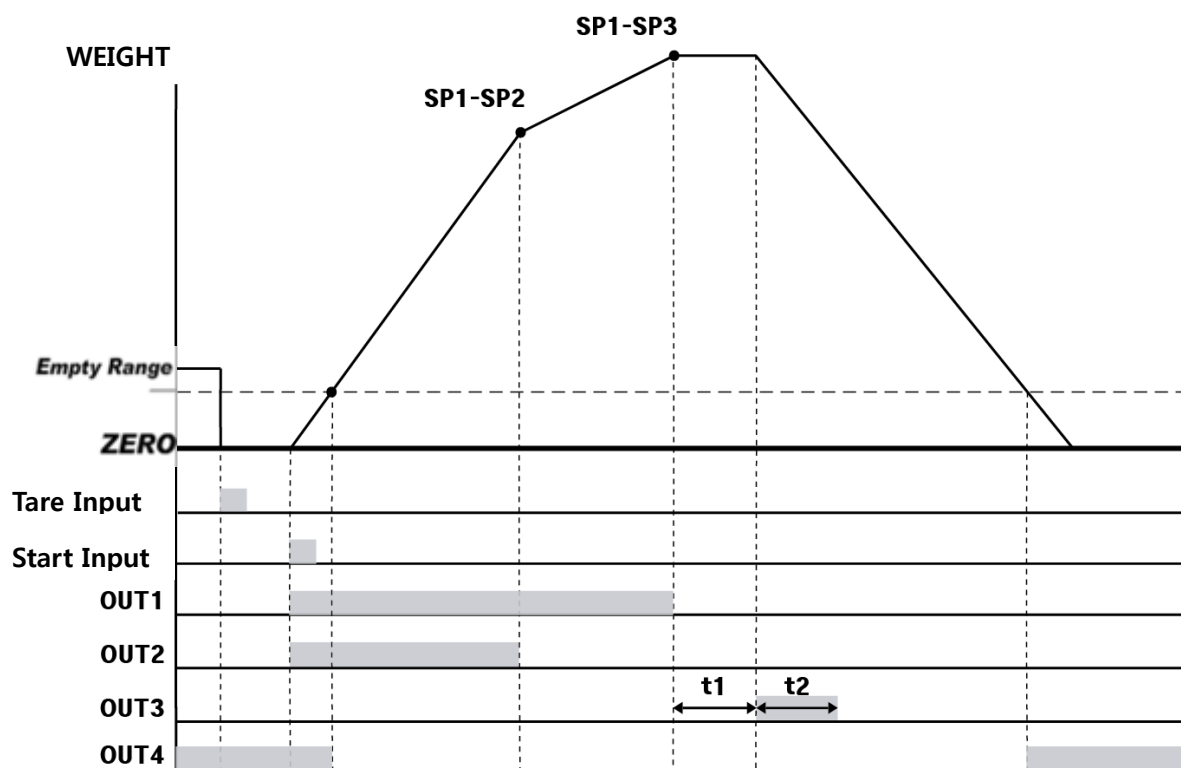
### Relay Output

| Relay        | Contents                                                     | Relay        | Contents                                                     |
|--------------|--------------------------------------------------------------|--------------|--------------------------------------------------------------|
| <b>OUT 1</b> | Current weight < SP1 (ON)<br>Current weight $\geq$ SP1 (OFF) | <b>OUT 2</b> | Current weight < SP2 (ON)<br>Current weight $\geq$ SP2 (OFF) |
| <b>OUT 3</b> | Current weight < SP3 (ON)<br>Current weight $\geq$ SP3 (OFF) | <b>OUT 4</b> | Current weight < SP4 (ON)<br>Current weight $\geq$ SP4 (OFF) |



## SI 460C DIN SIZE WEIGHING INDICATOR

- ◆ Weighing Mode 4 – Packer Mode 1 (Function 223 – 04) – 2 Step control
- Relay “ON” when weight reaches set value, Relay “ON” Within “EMPTY” range



SP1, SP2, SP3 set

| SP1    | SP2  | SP3       |
|--------|------|-----------|
| Target | Drib | Free fall |

t1, t2 set

| Time | Content                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------|
| t1   | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after t1 time. |
| t2   | Finish Relay Output Delay Time (F240)                                                                                      |

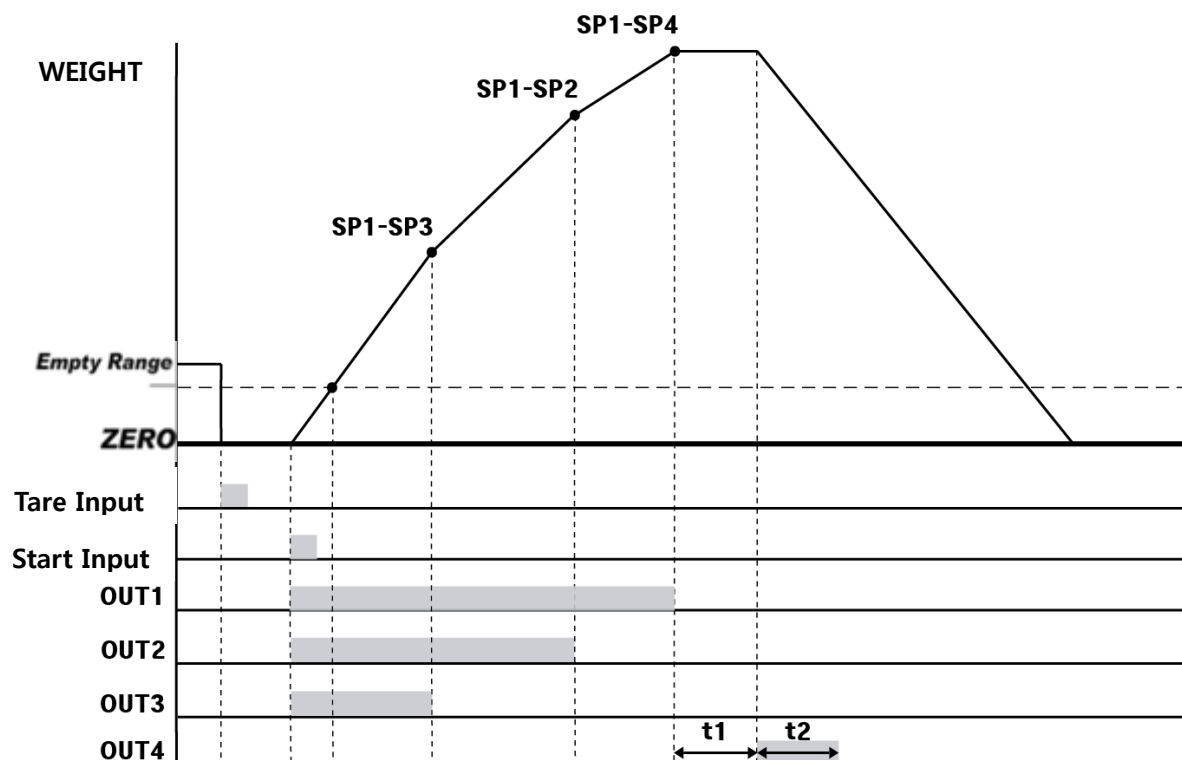
Relay Output

| Relay | Contents                                               | Relay | Contents                                      |
|-------|--------------------------------------------------------|-------|-----------------------------------------------|
| OUT 1 | “START”(ON)<br>Current weight ≥ SP1-SP3(OFF)           | OUT 2 | “START”(ON)<br>Current weight ≥ SP1-SP2(OFF)  |
| OUT 3 | Current weight ≥ SP1-SP3<br>After “t1”, during t2”(ON) | OUT 4 | Within “EMPTY RANGE<br>(Function 201) set(ON) |

## SI 460C DIN SIZE WEIGHING INDICATOR

### ◆ Weighing Mode 5 – Packer Mode 2(Function223 – 05) / 3 Steps control

– Relay “ON” at finish point



SP1, SP2, SP3, SP4 set

| SP1    | SP2  | SP3  | SP4       |
|--------|------|------|-----------|
| Target | Drib | Bulk | Free fall |

t1, t2 set

| Time | Content                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------|
| t1   | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after t1 time. |
| t2   | Finish Relay Output Delay Time (F240)                                                                                      |

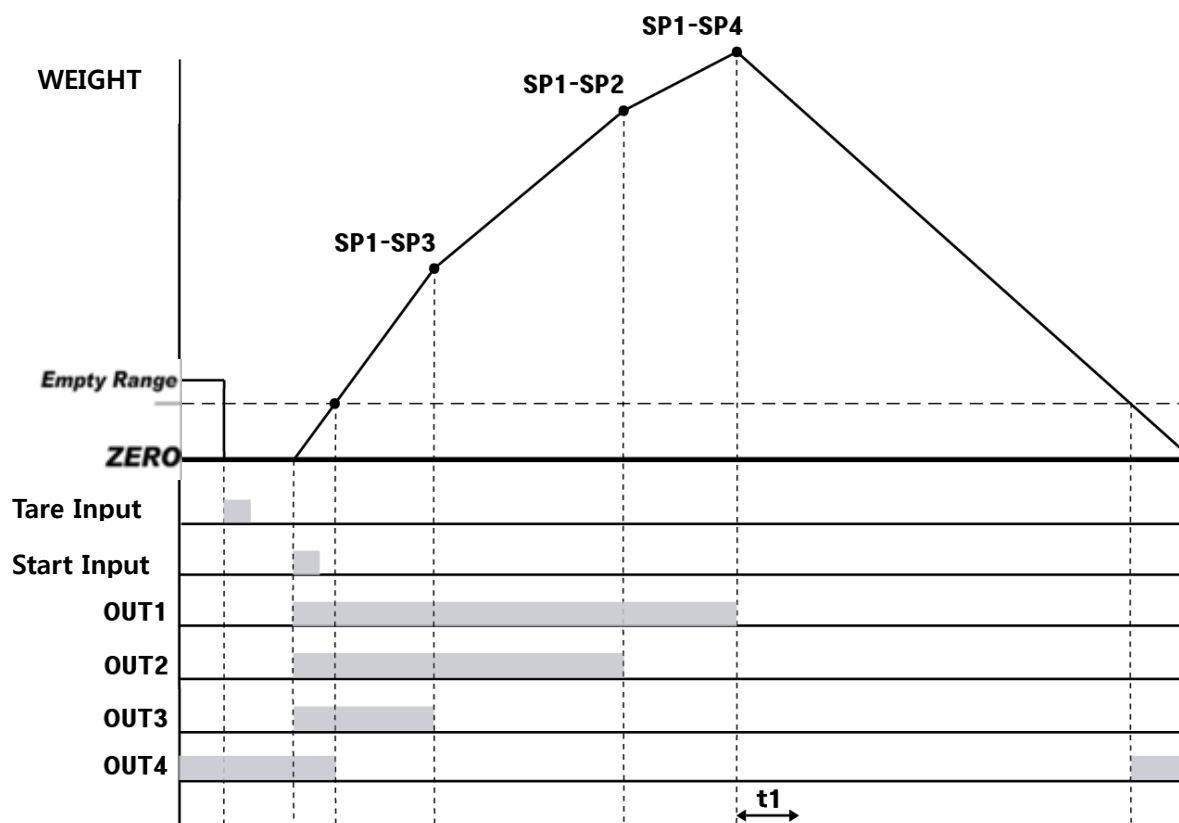
Relay Output

| Relay | Contents                                                          | Relay | Contents                                          |
|-------|-------------------------------------------------------------------|-------|---------------------------------------------------|
| OUT 1 | "START"(ON)<br>Current weight $\geq$ SP1-SP3(OFF)                 | OUT 2 | "START"(ON)<br>Current weight $\geq$ SP1-SP2(OFF) |
| OUT 3 | Current weight $\geq$ SP1-SP3<br>After "t1" time, during "t2"(ON) | OUT 4 | Within "EMPTY RANGE(F201) set(ON)                 |

## SI 460C DIN SIZE WEIGHING INDICATOR

### ◆ Weighing Mode 6 – Packer Mode 3(F223 – 06) / 3 Steps Control

- Relay "ON" at Empty range



SP1, SP2, SP3, SP4 set

| SP1    | SP2  | SP3  | SP4       |
|--------|------|------|-----------|
| Target | Drib | Bulk | Free fall |

$t1$  set

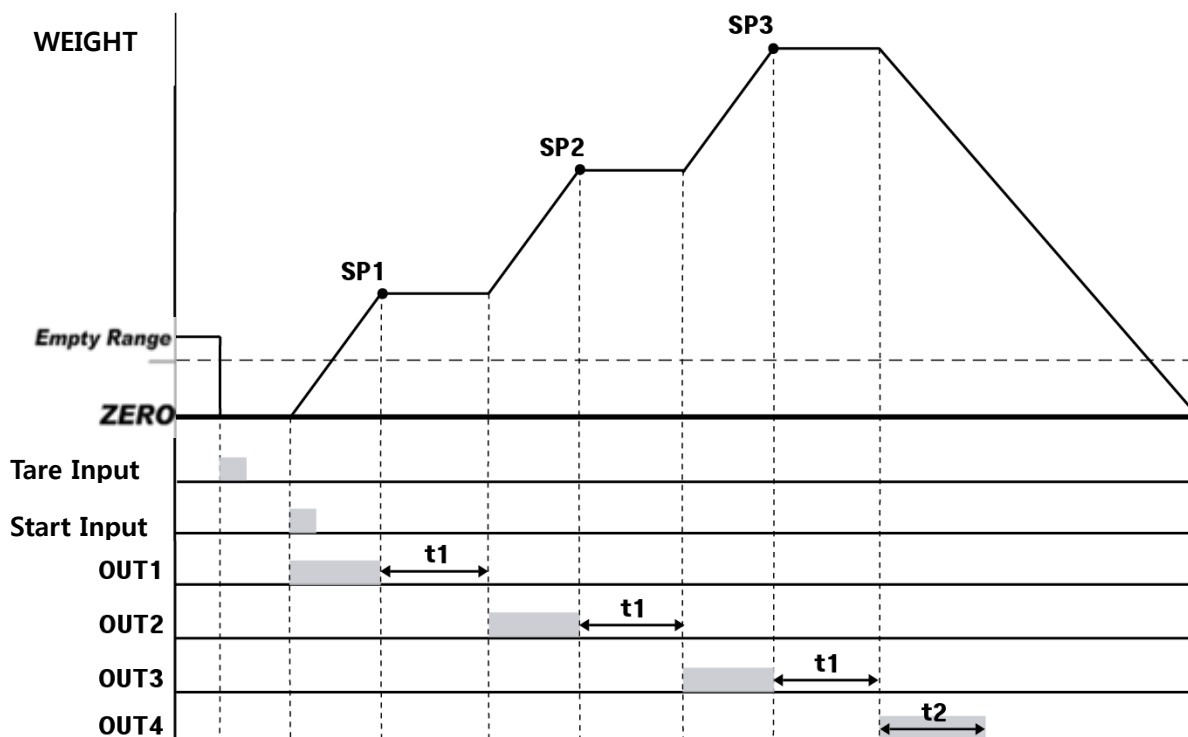
| Time | Content                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------|
| $t1$ | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after $t1$ time. |

Relay Output

| Relay | Contents                                          | Relay | Contents                                          |
|-------|---------------------------------------------------|-------|---------------------------------------------------|
| OUT 1 | "START"(ON)<br>Current weight $\geq$ SP1-SP4(OFF) | OUT 2 | "START"(ON)<br>Current weight $\geq$ SP1-SP2(OFF) |
| OUT 3 | "START"(ON)<br>Current weight $\geq$ SP1-SP3(OFF) | OUT 4 | Within "EMPTY RANGE(F201) set(ON)                 |

## SI 460C DIN SIZE WEIGHING INDICATOR

### ◆ Weighing Mode 7 – Accumulating Mode 1 (F223 – 07)



t1, t2 set

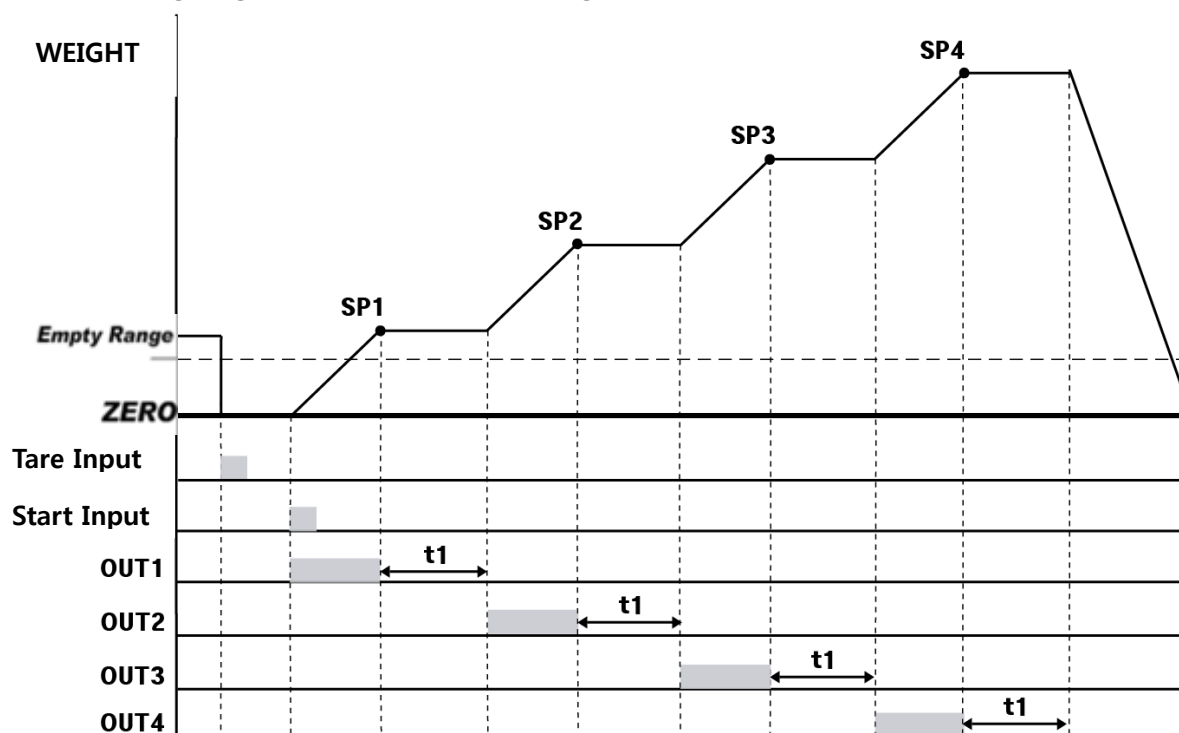
| Time | Content                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------|
| t1   | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after t1 time. |
| t2   | Finish Relay Output Delay Time (F240)                                                                                      |

#### Relay Output

| Relay | Contents                                                                             | Relay | Contents                                                                             |
|-------|--------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| OUT 1 | "START"(ON)<br>Current weight $\geq$ SP1-SP1freefall(OFF)                            | OUT 2 | Current weight $<$ SP2-SP2freefall(ON)<br>Current weight $\geq$ SP2-SP2freefall(OFF) |
| OUT 3 | Current weight $<$ SP3-SP3freefall(ON)<br>Current weight $\geq$ SP3-SP3freefall(OFF) | OUT 4 | Current weight $\geq$ SP3-SP3freefall<br>After "t1" time, during "t2"(ON)            |

# SI 460C DIN SIZE WEIGHING INDICATOR

## ◆ Weighing Mode 8 – Accumulating Mode 2 (F223 – 08)



**t1 set**

| Time | Content                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------|
| t1   | Finish Relay Output Delay Time (Function 239)<br>In case of Function 103-3 or 103-6, save the weighing data after t1 time. |

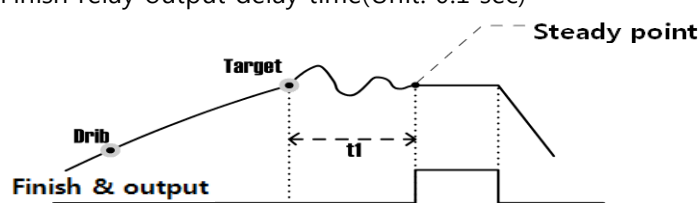
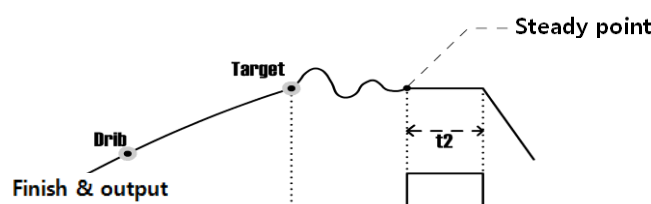
### Relay Output

| Relay        | Contents                                                                             | Relay        | Contents                                                                             |
|--------------|--------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------|
| <b>OUT 1</b> | "START"(ON)<br>Current weight $\geq$ SP1-SP1freefall(OFF)                            | <b>OUT 2</b> | Current weight $<$ SP2-SP2freefall(ON)<br>Current weight $\geq$ SP2-SP2freefall(OFF) |
| <b>OUT 3</b> | Current weight $<$ SP3-SP3freefall(ON)<br>Current weight $\geq$ SP3-SP3freefall(OFF) | <b>OUT 4</b> | Current weight $<$ SP4-SP4freefall<br>Current weight $\geq$ SP4-SP4freefall(OFF)     |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Relay Control Type                 |   |    |                            |  |    |                   |
|------------------------------------|---|----|----------------------------|--|----|-------------------|
| 224                                | ● | 00 | Minus& Plus weight Control |  |    |                   |
|                                    |   | 01 | Plus weight Control        |  |    |                   |
| Relay Output Auto / Manual Setting |   |    |                            |  |    |                   |
| 225                                | ● | 00 | Auto(Follow default)       |  |    |                   |
|                                    |   | 01 | Manual(User custom         |  |    |                   |
| Relay Output 1 Setting             |   |    |                            |  |    |                   |
| 226                                | ● | 00 | Disuse                     |  | 03 | SP2               |
|                                    |   | 01 | Near zero                  |  | 04 | SP3               |
|                                    |   | 02 | SP1                        |  | 05 | SP4               |
| Relay Output 2 Setting             |   |    |                            |  |    |                   |
| 227                                | ● | 00 | Disuse                     |  | 03 | SP2               |
|                                    |   | 01 | Near zero                  |  | 04 | SP3               |
|                                    |   | 02 | SP1                        |  | 05 | SP4               |
| Relay Output 3 Setting             |   |    |                            |  |    |                   |
| 228                                | ● | 00 | Disuse                     |  | 03 | SP2               |
|                                    |   | 01 | Near zero                  |  | 04 | SP3               |
|                                    |   | 02 | SP1                        |  | 05 | SP4               |
| Relay Output 4 Setting             |   |    |                            |  |    |                   |
| 229                                | ● | 00 | Disuse                     |  | 03 | SP2               |
|                                    |   | 01 | Near zero                  |  | 04 | SP3               |
|                                    |   | 02 | SP1                        |  | 05 | SP4               |
| External Input 1 Setting           |   |    |                            |  |    |                   |
| 233                                |   | 00 | Disuse                     |  | 05 | Hold              |
|                                    | ● | 01 | Zero                       |  | 06 | Hold/Hold removal |
|                                    |   | 02 | Tare                       |  | 07 | Hold/Hold removal |
|                                    |   | 03 | Tare removal               |  | 08 | Print             |
|                                    |   | 04 | Tare/Tare removal          |  | 09 | Subtotal print    |
| External Input 2 Setting           |   |    |                            |  |    |                   |
| 234                                |   | 00 | Disuse                     |  | 05 | Hold              |
|                                    |   | 01 | Zero                       |  | 06 | Hold/Hold removal |
|                                    |   | 02 | Tare                       |  | 07 | Hold/Hold removal |
|                                    |   | 03 | Tare removal               |  | 08 | Print             |
|                                    | ● | 04 | Tare/Tare removal          |  | 09 | Subtotal print    |

# SI 460C DIN SIZE WEIGHING INDICATOR

| External Input 3 Setting            |    |         |                                                                                                                                                                                                                                                                                                                                                                                         |   |    |                   |
|-------------------------------------|----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|-------------------|
| 235                                 |    | 00      | Disuse                                                                                                                                                                                                                                                                                                                                                                                  |   | 05 | Hold              |
|                                     |    | 01      | Zero                                                                                                                                                                                                                                                                                                                                                                                    |   | 06 | Hold/Hold removal |
|                                     |    | 02      | Tare                                                                                                                                                                                                                                                                                                                                                                                    | ● | 07 | Hold/Hold removal |
|                                     |    | 03      | Tare removal                                                                                                                                                                                                                                                                                                                                                                            |   | 08 | Print             |
|                                     |    | 04      | Tare/Tare removal                                                                                                                                                                                                                                                                                                                                                                       |   | 09 | Subtotal print    |
| External Input 4 Setting            |    |         |                                                                                                                                                                                                                                                                                                                                                                                         |   |    |                   |
| 236                                 |    | 00      | Disuse                                                                                                                                                                                                                                                                                                                                                                                  |   | 05 | Hold              |
|                                     |    | 01      | Zero                                                                                                                                                                                                                                                                                                                                                                                    |   | 06 | Hold/Hold removal |
|                                     |    | 02      | Tare                                                                                                                                                                                                                                                                                                                                                                                    |   | 07 | Hold/Hold removal |
|                                     |    | 03      | Tare removal                                                                                                                                                                                                                                                                                                                                                                            | ● | 08 | Print             |
|                                     |    | 04      | Tare/Tare removal                                                                                                                                                                                                                                                                                                                                                                       |   | 09 | Subtotal print    |
| Finish Relay Output Delay Time (t1) |    |         |                                                                                                                                                                                                                                                                                                                                                                                         |   |    |                   |
| 239                                 | 10 | 00 ~ 99 | <div>Finish relay output delay time(Unit: 0.1 sec)</div> <div></div> <div>Ex)</div> <div>"00": SP4 reach then when stable active finish relay output</div> <div>"20": SP4 reach then after 2.0 second finish relay output</div> <div>"99": SP4 reach then after 9.9 second finish relay output</div> |   |    |                   |
| Finish Relay Output Time (t2)       |    |         |                                                                                                                                                                                                                                                                                                                                                                                         |   |    |                   |
| 240                                 | 10 | 00 ~ 99 | <div>Finish relay output time(Unit: 0.1 sec)</div> <div></div> <div>Ex)</div> <div>"00": Finish relay output under near zero</div> <div>"01": Finish relay output by 0.1 second</div> <div>"20": Finish relay output by 2.0 second</div>                                                            |   |    |                   |
| Zero state lamp output standard     |    |         |                                                                                                                                                                                                                                                                                                                                                                                         |   |    |                   |
| 251                                 | ●  | 00      | Near Zero                                                                                                                                                                                                                                                                                                                                                                               |   |    |                   |
|                                     |    | 01      | Zero                                                                                                                                                                                                                                                                                                                                                                                    |   |    |                   |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Near zero output Setting Under tare ON state                         |   |    |                                                     |
|----------------------------------------------------------------------|---|----|-----------------------------------------------------|
| 253                                                                  | ● | 00 | Zero Output                                         |
|                                                                      |   | 01 | Actual zero output except Tare weight               |
| Parity / Stop bit                                                    |   |    |                                                     |
| 301                                                                  | ● | 00 | DATA Bit (8 Bit) STOP Bit (1 Bit) Parity Bit (Non)  |
|                                                                      |   | 01 | DATA Bit (8 Bit) STOP Bit (1 Bit) Parity Bit (Odd)  |
|                                                                      |   | 02 | DATA Bit (8 Bit) STOP Bit (1 Bit) Parity Bit (Even) |
|                                                                      |   | 03 | DATA Bit (7 Bit) STOP Bit (1 Bit) Parity Bit (Odd)  |
|                                                                      |   | 04 | DATA Bit (7 Bit) STOP Bit (1 Bit) Parity Bit (Even) |
| Serial Communication Speed selection                                 |   |    |                                                     |
| 302                                                                  |   | 00 | 2,400bps                                            |
|                                                                      |   | 01 | 4,800bps                                            |
|                                                                      | ● | 02 | 9,600bps                                            |
|                                                                      |   | 03 | 14,400bps                                           |
|                                                                      |   | 04 | 19,200bps                                           |
|                                                                      |   | 05 | 28,800bps                                           |
|                                                                      |   | 06 | 38,400bps                                           |
|                                                                      |   | 07 | 57,600bps                                           |
|                                                                      |   | 08 | 76,800bps                                           |
|                                                                      |   | 09 | 115,200bps                                          |
| DATA transference Method selection                                   |   |    |                                                     |
| 303                                                                  | ● | 00 | Simplex Mode / Stream Mode                          |
|                                                                      |   | 01 | Duplex Mode / Command Mode                          |
|                                                                      |   | 02 | Print Mode                                          |
|                                                                      |   | 03 | MODBUS(RTU)                                         |
| Command mode "Check Sum" detection selection (F303-01)               |   |    |                                                     |
| 304                                                                  | ● | 00 | Disuse                                              |
|                                                                      |   | 01 | Use                                                 |
| Stream mode DATA Transference Format selection (Refer chapter 6-1-4) |   |    |                                                     |
| 305                                                                  | ● | 00 | Format 1 (19byte)                                   |
|                                                                      |   | 01 | Format 2 (22byte)                                   |
|                                                                      |   | 02 | Format 3 (17byte)                                   |
|                                                                      |   | 03 | Format 4 (22byte)                                   |
| Stream mode Data transference                                        |   |    |                                                     |
| 306                                                                  | ● | 00 | Continuously                                        |
|                                                                      |   | 01 | Single time on every steady state                   |
|                                                                      |   | 02 | At the first steady point                           |
|                                                                      |   | 03 | Single time(when finish weighing process)           |
|                                                                      |   | 04 | When input "PRINT" key                              |



## SI 460C DIN SIZE WEIGHING INDICATOR

| Modbus Transmit Data MSB/LSB location                                                 |   |    |                                           |                  |    |                   |
|---------------------------------------------------------------------------------------|---|----|-------------------------------------------|------------------|----|-------------------|
| 307                                                                                   | ● | 00 | Standard                                  |                  |    |                   |
|                                                                                       |   | 01 | Change                                    |                  |    |                   |
| Parity / Stop bit (Option Port)                                                       |   |    |                                           |                  |    |                   |
| 308                                                                                   | ● | 00 | DATA Bit (8 Bit)                          | STOP Bit (1 Bit) |    | Parity Bit (Non)  |
|                                                                                       |   | 01 | DATA Bit (8 Bit)                          | STOP Bit (1 Bit) |    | Parity Bit (Odd)  |
|                                                                                       |   | 02 | DATA Bit (8 Bit)                          | STOP Bit (1 Bit) |    | Parity Bit (Even) |
|                                                                                       |   | 03 | DATA Bit (7 Bit)                          | STOP Bit (1 Bit) |    | Parity Bit (Odd)  |
|                                                                                       |   | 04 | DATA Bit (7 Bit)                          | STOP Bit (1 Bit) |    | Parity Bit (Even) |
| Serial Communication Speed selection                                                  |   |    |                                           |                  |    |                   |
| 309                                                                                   |   | 00 | 2,400bps                                  |                  | 05 | 28,800bps         |
|                                                                                       |   | 01 | 4,800bps                                  |                  | 06 | 38,400bps         |
|                                                                                       | ● | 02 | 9,600bps                                  |                  | 07 | 57,600bps         |
|                                                                                       |   | 03 | 14,400bps                                 |                  | 08 | 76,800bps         |
|                                                                                       |   | 04 | 19,200bps                                 |                  | 09 | 115,200bps        |
| DATA transference Method selection (Option Port)                                      |   |    |                                           |                  |    |                   |
| 310                                                                                   | ● | 00 | Simplex Mode / Stream Mode                |                  |    |                   |
|                                                                                       |   | 01 | Duplex Mode / Command Mode                |                  |    |                   |
|                                                                                       |   | 02 | Print Mode                                |                  |    |                   |
|                                                                                       |   | 03 | MODBUS(RTU)                               |                  |    |                   |
| Command mode “Check Sum” detection selection (Option Port)                            |   |    |                                           |                  |    |                   |
| 311                                                                                   | ● | 00 | Disuse                                    |                  |    |                   |
|                                                                                       |   | 01 | Use                                       |                  |    |                   |
| Stream mode DATA Transference Format selection (Expansion Port / Refer chapter 6-1-4) |   |    |                                           |                  |    |                   |
| 312                                                                                   | ● | 00 | Format 1 (19byte)                         |                  |    |                   |
|                                                                                       |   | 01 | Format 2 (22byte)                         |                  |    |                   |
|                                                                                       |   | 02 | Format 3 (17byte)                         |                  |    |                   |
|                                                                                       |   | 03 | Format 4 (22byte)                         |                  |    |                   |
| Stream mode Data transference(Expansion Port)                                         |   |    |                                           |                  |    |                   |
| 313                                                                                   | ● | 00 | Continuously                              |                  |    |                   |
|                                                                                       |   | 01 | Single time on every steady state         |                  |    |                   |
|                                                                                       |   | 02 | At the first steady point                 |                  |    |                   |
|                                                                                       |   | 03 | Single time(when finish weighing process) |                  |    |                   |
|                                                                                       |   | 04 | When input “PRINT” key                    |                  |    |                   |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Print Format                                               |    |         |                                                                  |
|------------------------------------------------------------|----|---------|------------------------------------------------------------------|
| 352                                                        | ●  | 00      | Continuous Print                                                 |
|                                                            |    | 01      | Single Print                                                     |
| Print Output Delay Time                                    |    |         |                                                                  |
| 354                                                        | 00 | 00 ~ 09 | Unit: 1 sec                                                      |
| Paper Withdraw Rate setting(After Continuous/Single Print) |    |         |                                                                  |
| 355                                                        | 00 | 00 ~ 09 | Unit: 1 line add                                                 |
| Paper Withdraw Rate setting(After SUB/GRAND Total Print)   |    |         |                                                                  |
| 356                                                        | 00 | 00 ~ 09 | Unit: 1 line add                                                 |
| Grand total data delete                                    |    |         |                                                                  |
| 358                                                        | ●  | 00      | Disuse                                                           |
|                                                            |    | 01      | Use                                                              |
| Analog Output Applying Weight Range Setting                |    |         |                                                                  |
| 401                                                        | ●  | 00      | Absolute number(-&+)                                             |
|                                                            |    | 01      | Positive number(only +)                                          |
| Analog Output Direction Setting                            |    |         |                                                                  |
| 402                                                        | ●  | 00      | Forward                                                          |
|                                                            |    | 01      | Reverse                                                          |
| Analog Output Standard                                     |    |         |                                                                  |
| 403                                                        | ●  | 00      | Max Capacity : 20mA or 10V will be output                        |
|                                                            |    | 01      | SP1 set point : 20mA or 10V will be output                       |
|                                                            |    | 02      | SP2 set point : 20mA or 10V will be output                       |
|                                                            |    | 03      | SP3 set point : 20mA or 10V will be output                       |
|                                                            |    | 04      | SP4 set point : 20mA or 10V will be output                       |
|                                                            |    | 05      | GROSS value = Max Capacity(When "TARE" GROSS value): 20mA or 10V |

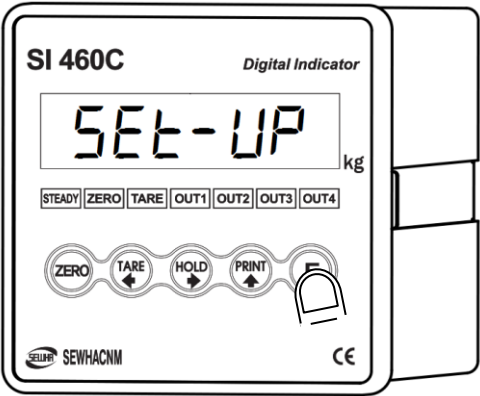
# SI 460C DIN SIZE WEIGHING INDICATOR

## 5-4-4. Hidden Option

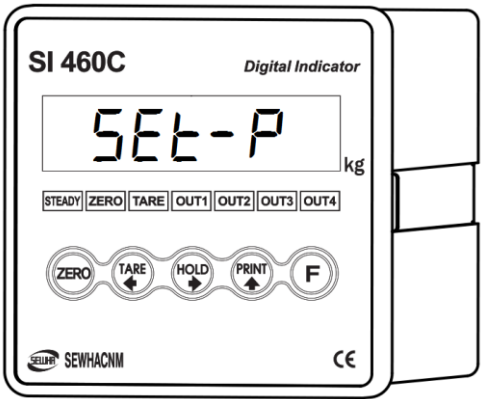
How to enter Hidden function setting mode : Press  Key during 4sec and input your password. Default password is     (1111). Press  key after input your password.

| F-LIST | Subject                                        | Default | Contents                                                            |
|--------|------------------------------------------------|---------|---------------------------------------------------------------------|
| H01    | Serial Number Check                            | -       | -                                                                   |
| H03    | S/W Version Check                              | -       | Program version check                                               |
| H04    | H/W Version Check                              | -       | -                                                                   |
| H05    | DATE(Y,M,D) Check / Modification               | -       | -                                                                   |
| H06    | TIME(H,M,S) Check / Modification (24Hours)     | -       | -                                                                   |
| H07    | Password Setting (4digit)                      | -       | 1:Tare Key 2:Hold Key 3:Print Key (Password combination within 1~3) |
| H08    | Maximum Capacity Weight Check and Modification | -       | -                                                                   |
| H13    | Analog Output Use Setting                      | 00      | 00:4-20mA Output 01:0-10V Output                                    |
| H14    | Minimum Analog Output Setting                  | -       | Input Range:-20~+20, Default:0                                      |
| H15    | Maximum Analog Output Setting                  | -       | Input Range:-20~+20, Default:0                                      |
| H16    | Function List Factory Reset                    | -       | Change to default F-setting                                         |

5-5. SET-POINT Setting



Press  key for times → Displaying "SET-UP" → Input  key.



| Key                                                                                 | Contents |
|-------------------------------------------------------------------------------------|----------|
|   | SP1 Set  |
|  | SP2 Set  |
|  | SP3 Set  |
|  | SP4 Set  |

-  key for Candle / Back,  key for Save.

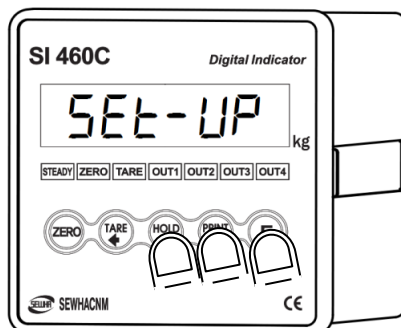
# SI 460C DIN SIZE WEIGHING INDICATOR

## 5-6. Test Mode



Caution .

Before starting the TEST mode, please remove operating devices.



Press  key 4times → When "SETUP" is displayed

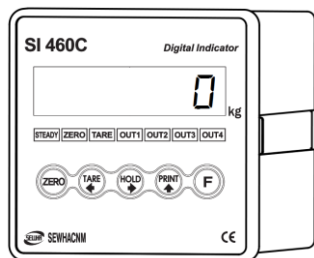
- Press  key to enter Test mode 1
- Press  key to enter Test mode 2
- Press  key to go back or cancel.

| Key                                                                                 | Test Mode 1                  | Test Mode 2             |
|-------------------------------------------------------------------------------------|------------------------------|-------------------------|
|  | Analog<br>Deviation<br>Check | External Input          |
|  | Display Check                | Relay Output            |
|  | Key Input Check              | Serial I/F (Standard)   |
|  | Analog Output(4~20mA/0~10V)  | Serial I/F (Additional) |

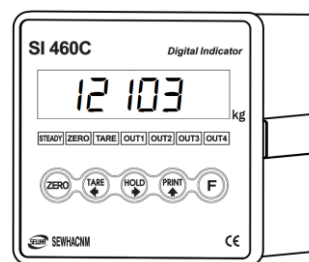
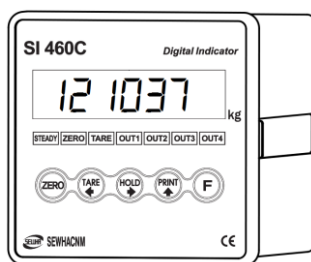
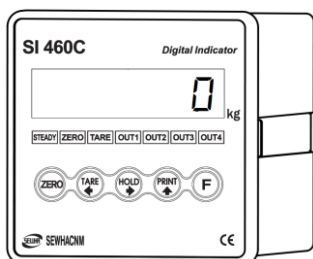
# SI 460C DIN SIZE WEIGHING INDICATOR

## 5-6-1. Analog Deviation Check Mode

---



You can check the deviation of analog value.



Display current  
analog value to '0'

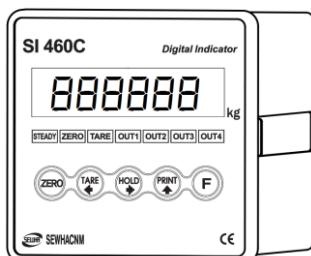


Display from  
1 million unit



Display from  
ten million unit

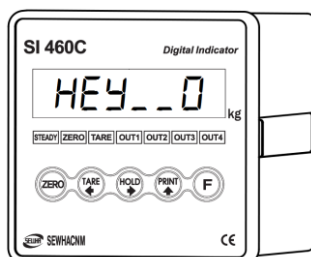
## 5-6-2. Display Check Mode



Test FND and LED  
Blink FND and LED by 1 Segment gradually.

## 5-6-3. Key Input Check Mode

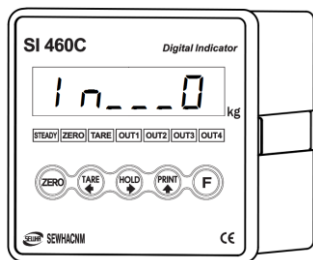
---



Press each key on the screen show  
"1", "2", "3", "4", "5"

## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-6-4. External Input Check Mode

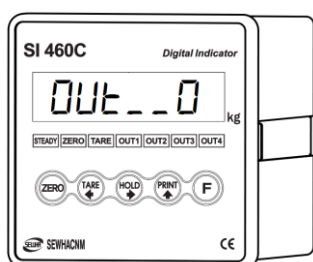


---

Connect external input on the screen show  
"1", "2", "3", "4".

---

### 5-6-5. Relay Output Check Mode

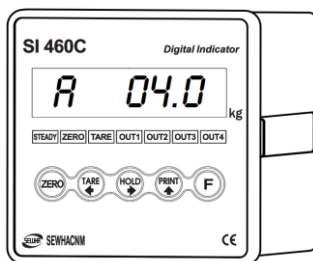


---

Output Relay "1", "2", "3", "4" gradually  
(Don't connect any device with relay output terminal.)

---

### 5-6-6. Analog Output 4~20mA, 0~10V Check Mode



Analog output simulation : 0(4mV,0V)~20(20mV,10V)

Whenever you press  key, display will be switched  
minimum or maximum value.

If the range is 4~20mA, A will be displayed.

If the range is 0~10V, V will be displayed.

---

Use left and right key to check the output value with unit 0.1.

If entered value is over maximum value, actual output will be 100% of that range.

EX) When analog output mode is 4~20mA, 4mA will be out if you enter 4.0

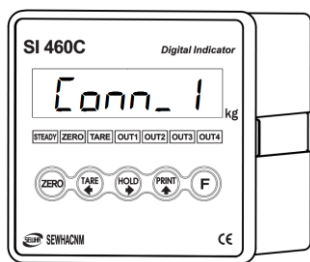
When analog output mode is 4~20mA, 20mA will be out if you enter 20.0

When analog output mode is 0~10V, 4.7V will be out if you enter 4.7

When analog output mode is 0~10V, 10V will be out if you enter 10.0

## SI 460C DIN SIZE WEIGHING INDICATOR

### 5-6-7. Serial I/F Check Mode (Standard Port)

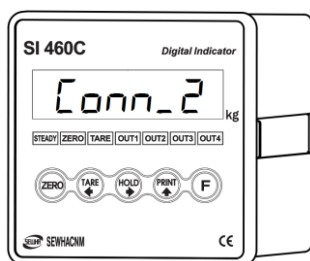


Connect with PC or other devices through serial interface and check the transference and receipt.

At the normal operation, LED will blink one time.

If you press any key except "F", testing protocol will be transferred.

### 5-6-8. Serial I/F Check Mode (Additional Port)



Connect with PC or other devices through serial interface and check the transference and receipt.

At the normal operation, LED will blink one time.

If you press any key except "F", testing protocol will be transferred.

### ※ TESTING PROTOCOL.

Format: STX Id No. TEST ETX



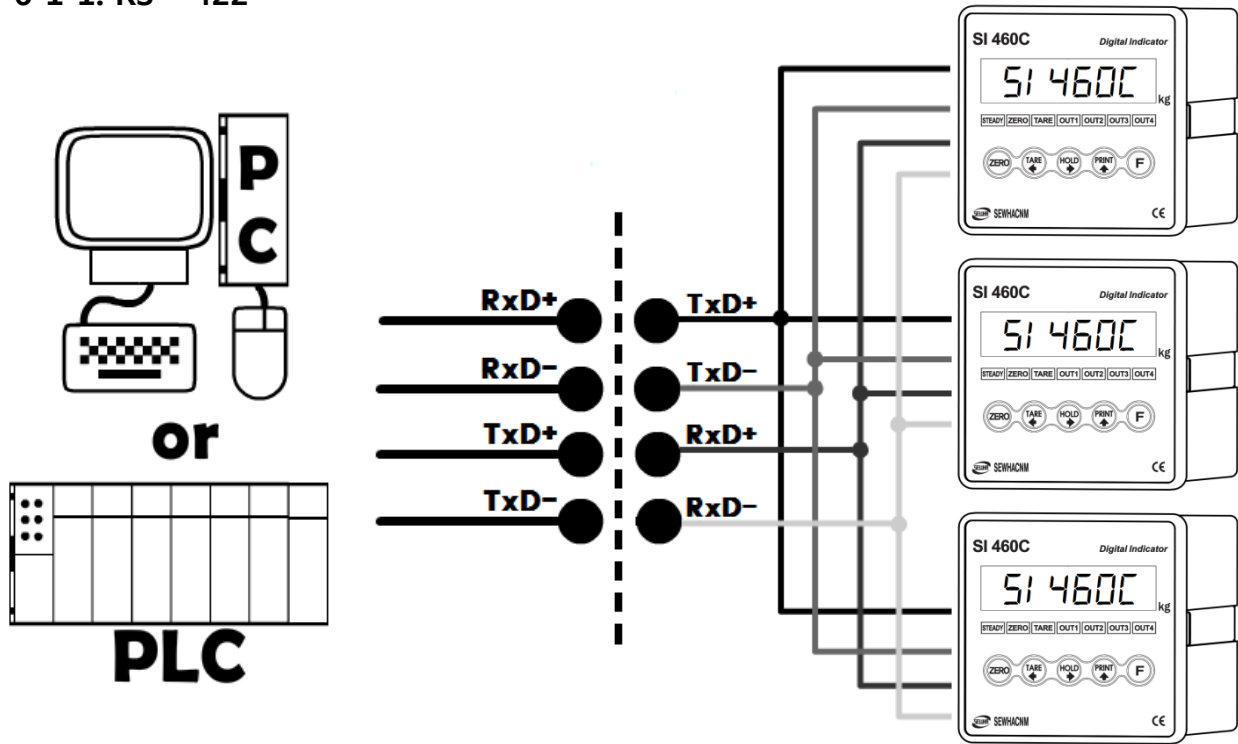
You cannot test Standard and Extended Serial Interface at the same time.



# 6. INTERFACE

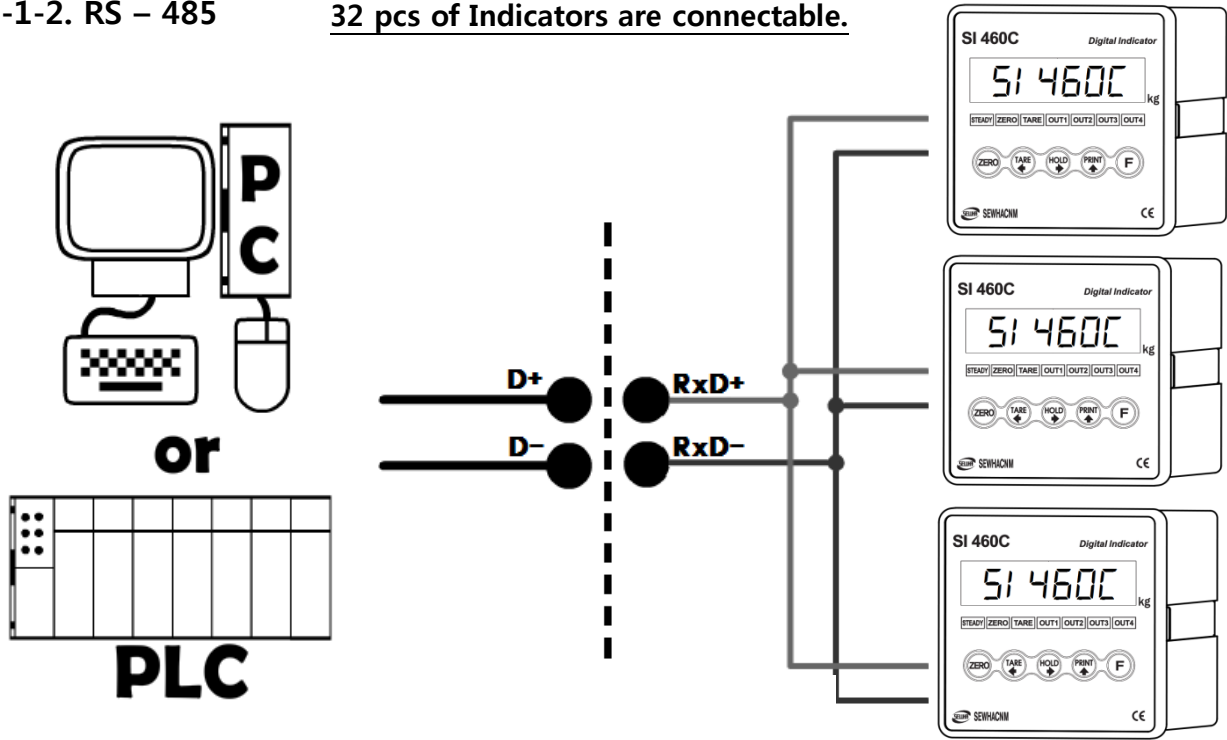
## 6-1. Serial Interface

### 6-1-1. RS – 422



### 6-1-2. RS – 485

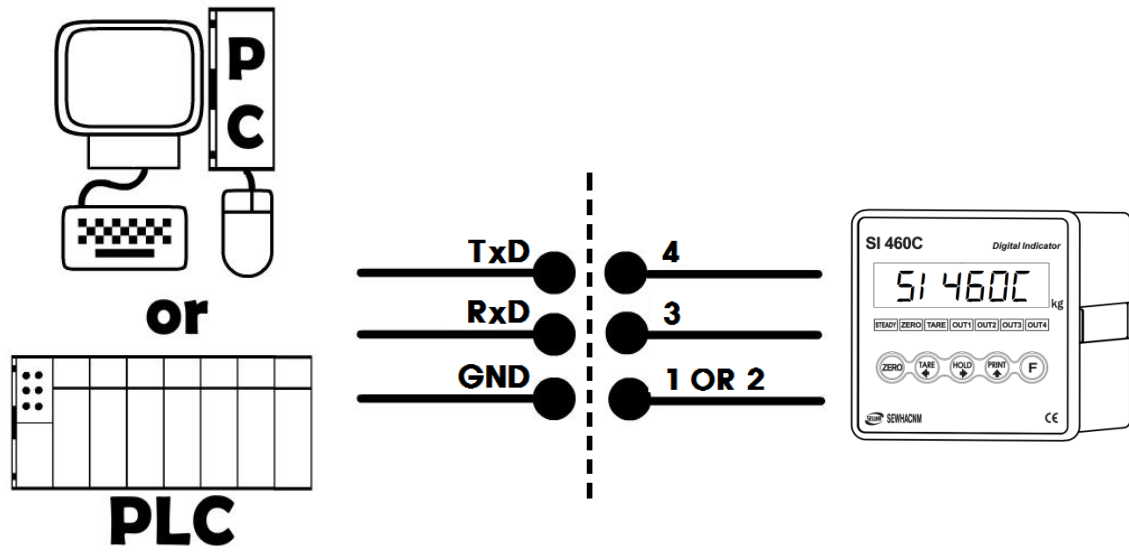
32 pcs of Indicators are connectable.



32 pcs of Indicators are connectable.

# SI 460C DIN SIZE WEIGHING INDICATOR

## 6-1-3. RS – 232 (Option Port)



**Caution**

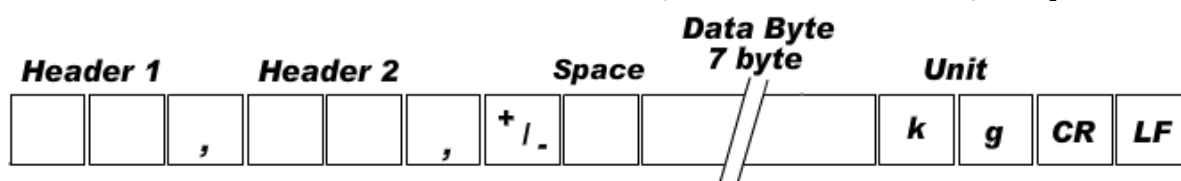
Serial communication interface is sensitive to electric noise.

Install isolated place from Power cable or other electric cables and wires,  
and please use shielded cable for better performance

# SI 460C DIN SIZE WEIGHING INDICATOR

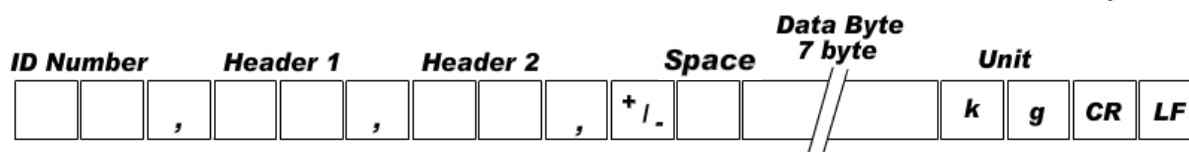
## 6-1-4. Data Format

1. Data Format1 : ID Number is not be transferred. (Refer F-function 305-00) -19byte



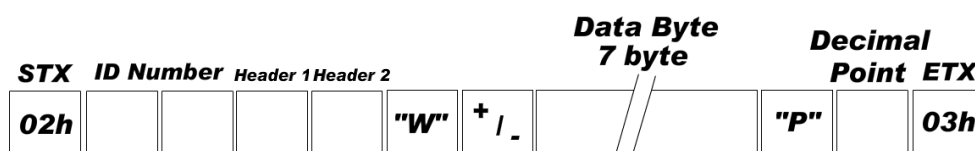
| Header1        | Header2                          |
|----------------|----------------------------------|
| OL : OVER LOAD | NT : NET-WEIGHT(Tare is not set) |
| ST : STEADY    | GS : when setting TARE           |
| US : UNSTEADY  |                                  |

2. Data Format2 : ID Number + Data Transference (Refer F-function 101, 305-01) -22byte



| Header1        | Header2                          |
|----------------|----------------------------------|
| OL : OVER LOAD | NT : NET-WEIGHT(Tare is not set) |
| ST : STEADY    | GS : when setting TARE           |
| US : UNSTEADY  |                                  |

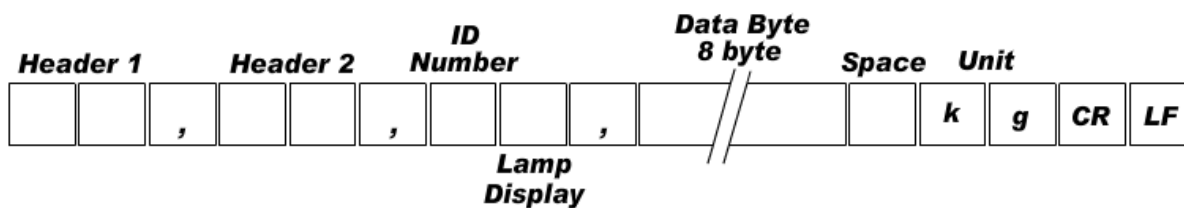
3. Data Format3 : ID Number + State (Refer F-function 101, 305-02) -17byte



| Header1      | Header2          |
|--------------|------------------|
| O : OVER     | G : Gross weight |
| S : STEADY   | N : Net weight   |
| U : UNSTABLE |                  |

## SI 460C DIN SIZE WEIGHING INDICATOR

### 4. Format 4 (ID Number, Function 101, 305-03) – 22 byte

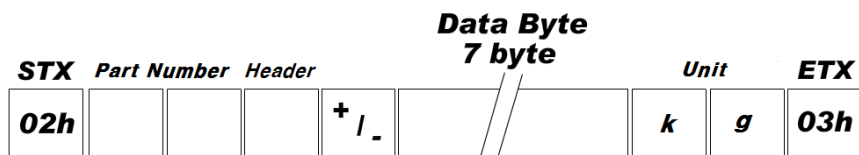


| Header1        | Header2                          |
|----------------|----------------------------------|
| OL : OVER LOAD | NT : NET-WEIGHT(Tare is not set) |
| ST : STEADY    | GS : when setting TARE           |
| US : UNSTEADY  |                                  |

### Lamp display

| Bit 0 | Bit 1 | Bit 2        | Bit 3 | Bit 4 | Bit 5 | Bit 6  | Bit 7 |
|-------|-------|--------------|-------|-------|-------|--------|-------|
| ZERO  | TARE  | Gross Weight | Print | HOLD  | 1     | STEADY | 1     |

### 5. Format 5 (P/N, Judgement weight, Weight transmission, 305-04) : For checker mode–15byte



| Header           |
|------------------|
| U : Under        |
| O : Over         |
| P : Pass         |
| N : No judgement |

## SI 460C DIN SIZE WEIGHING INDICATOR

### 6-1-5. Command Mode

Under "Command Mode", Indicator will recognize the receipt of Order based on 02h(STX) and 03h(ETX) signal, and transfers 06h(ACK), 15h(NAK).

| Error Code (Function 304 - 01 or 311 - 01) |                   |         |                                        |
|--------------------------------------------|-------------------|---------|----------------------------------------|
| 0 (30h)                                    | Normality         | 3 (33h) | Number data Error                      |
| 1 (31h)                                    | Check-Sum Error   | 4 (34h) | Excess of write data's allowable range |
| 2 (32h)                                    | Data length Error |         |                                        |

### 6-1-6. Read Command

| Subject                             | Command         | Length of transmission data |
|-------------------------------------|-----------------|-----------------------------|
| Current Weight                      | STX ID RCWT ETX | 22 byte                     |
| Current data                        | STX ID RCWD ETX | 46 byte                     |
| Grand total data                    | STX ID RGRD ETX | 28 byte                     |
| Current date data                   | STX ID RDAT ETX | 14 byte                     |
| Current time data                   | STX ID RTIM ETX | 14 byte                     |
| Tare weight                         | STX ID RTAR ETX | 18 byte                     |
| SP1                                 | STX ID RSP1 ETX | 17 byte                     |
| SP2                                 | STX ID RSP2 ETX | 17 byte                     |
| SP3                                 | STX ID RSP3 ETX | 17 byte                     |
| SP4                                 | STX ID RSP4 ETX | 17 byte                     |
| SP1, SP2, SP3, SP4                  | STX ID RSPA ETX | 38 byte                     |
| Current weight, Input, Output state | STX ID RWRS ETX | 26 byte                     |

## SI 460C DIN SIZE WEIGHING INDICATOR

### 6-1-7. Write Command

| Subject            | Command                                     | Length of transmission data |
|--------------------|---------------------------------------------|-----------------------------|
| Zero               | STX ID WZER ETX                             | 8 byte                      |
| Tare               | STX ID WTAR ETX                             | 8 byte                      |
| Tare Reset         | STX ID WTRS ETX                             | 8 byte                      |
| Hold               | STX ID WHOL ETX                             | 8 byte                      |
| Hold Reset         | STX ID WHRS ETX                             | 8 byte                      |
| Print              | STX ID WPRT ETX                             | 8 byte                      |
| Grand total Print  | STX ID WGPR ETX                             | 8 byte                      |
| Delete Grand total | STX ID WGTC ETX                             | 8 byte                      |
| Run                | STX ID WSTR ETX                             | 8 byte                      |
| Stop               | STX ID WSTP ETX                             | 8 byte                      |
| Date setting       | STX ID WDAT DATE<br>(YYMMDD) ETX            | 14 byte                     |
| Time setting       | STX ID WTIM TIME<br>(HHMMSS) ETX            | 14 byte                     |
| SP1                | STX ID WSP1 SP1 value ETX                   | 15 byte                     |
| SP2                | STX ID WSP2 SP2 value ETX                   | 15 byte                     |
| SP3                | STX ID WSP3 SP3 value ETX                   | 15 byte                     |
| SP4                | STX ID WSP4 SP4 value ETX                   | 15 byte                     |
| SP1, SP2, SP3, SP4 | STX ID WSPA SP1, SP2,<br>SP3, SP4 value ETX | 36 byte                     |

# SI 460C DIN SIZE WEIGHING INDICATOR

## 6-1-8. Read Command Detail

| Current Weight                                                                                                             |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |
|----------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) RCWT ETX                                                                                             |     |                                                                                                                         |     |     |     |     |     |     | HEX : 02 30 31 52 43 57 54 03 |     |     |     |     |     |
| Response                                                                                                                   |     | STX ID RCWT State1(1byte) State2(1byte) P decimal point(1byte) +/- (1byte) Current weight(7byte) Weight unit(2byte) ETX |     |     |     |     |     |     |                               |     |     |     |     |     |
|                                                                                                                            |     | State1 : O(Over Load) , S(Steady), U(Unsteady)                                                                          |     |     |     |     |     |     |                               |     |     |     |     |     |
|                                                                                                                            |     | State2 : N(Net weight), G(Gross weight)                                                                                 |     |     |     |     |     |     |                               |     |     |     |     |     |
| Ex) Steady(S), TARE not used(N), 0.000kg                                                                                   |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |
| STX                                                                                                                        | ID  | R                                                                                                                       | C   | W   | T   | S   | N   | P   | 3                             | +   | 0   | 0   | 0   |     |
| 02h                                                                                                                        | 30h | 31h                                                                                                                     | 52h | 43h | 57h | 54h | 53h | 4Eh | 50h                           | 33h | 2Bh | 30h | 30h | 30h |
| 0                                                                                                                          | 0   | 0                                                                                                                       | 0   | k   | g   | ETX |     |     |                               |     |     |     |     |     |
| 30h                                                                                                                        | 30h | 30h                                                                                                                     | 30h | 6Bh | 67h | 03h |     |     |                               |     |     |     |     |     |
| Indicator memory data                                                                                                      |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |
| ASCII : STX ID(2byte) RCWD ETX                                                                                             |     |                                                                                                                         |     |     |     |     |     |     | HEX : 02 30 31 52 43 57 44 03 |     |     |     |     |     |
| Response                                                                                                                   |     | STX ID RCWD P decimal point(1byte) date(6byte) Time(6byte)                                                              |     |     |     |     |     |     |                               |     |     |     |     |     |
|                                                                                                                            |     | No. of weighing(6byte) +/- (1byte) Tare(7byte) +/- (1byte)                                                              |     |     |     |     |     |     |                               |     |     |     |     |     |
|                                                                                                                            |     | weight(7byte) weight unit(2byte) ETX                                                                                    |     |     |     |     |     |     |                               |     |     |     |     |     |
| Ex) DATE : Aug 12 <sup>th</sup> ,2014, TIME : 12:00:00, the no. of weighing : 10, TARE : 2.000kg, current weight : 3.000kg |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |
| STX                                                                                                                        | ID  | R                                                                                                                       | C   | W   | D   | P   | 3   | 1   | 4                             | 0   | 1   | 0   | 1   |     |
| 02h                                                                                                                        | 30h | 31h                                                                                                                     | 52h | 43h | 57h | 44h | 50h | 33h | 31h                           | 34h | 30h | 31h | 30h | 31h |
| 1                                                                                                                          | 2   | 0                                                                                                                       | 0   | 0   | 0   | 0   | 0   | 0   | 0                             | 1   | 0   | +   | 0   | 0   |
| 31h                                                                                                                        | 32h | 30h                                                                                                                     | 30h | 30h | 30h | 30h | 30h | 30h | 30h                           | 31h | 30h | 2Bh | 30h | 30h |
| 0                                                                                                                          | 2   | 0                                                                                                                       | 0   | 0   | +   | 0   | 0   | 0   | 3                             | 0   | 0   | 0   | k   | g   |
| 30h                                                                                                                        | 32h | 30h                                                                                                                     | 30h | 30h | 2Bh | 30h | 30h | 30h | 33h                           | 30h | 30h | 30h | 6Bh | 67h |
| ETX                                                                                                                        |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |
| 03h                                                                                                                        |     |                                                                                                                         |     |     |     |     |     |     |                               |     |     |     |     |     |

# SI 460C DIN SIZE WEIGHING INDICATOR

| Grand Total data                                             |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
|--------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) RGRD ETX                               |     |                                                                                                              |     |     |     |     |     | HEX : 02 30 31 52 47 52 44 03 |     |     |     |     |     |     |
| Response                                                     |     | STX ID RGRD P decimal point(1byte) the no. of weighing (6byte)<br>Accumulated weight(10byte) unit(2byte) ETX |     |     |     |     |     |                               |     |     |     |     |     |     |
| Ex) the no. of weighing : 10 , Accumulated Weight : 10.000kg |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                          | ID  | R                                                                                                            | G   | R   | D   | P   | 3   | 0                             | 0   | 0   | 0   | 1   | 0   |     |
| 02h                                                          | 30h | 31h                                                                                                          | 52h | 47h | 52h | 44h | 50h | 33h                           | 30h | 30h | 30h | 30h | 31h | 30h |
| 0                                                            | 0   | 0                                                                                                            | 0   | 0   | 1   | 0   | 0   | 0                             | 0   | k   | g   | ETX |     |     |
| 30h                                                          | 30h | 30h                                                                                                          | 30h | 30h | 31h | 30h | 30h | 30h                           | 30h | 6Bh | 67h | 03h |     |     |
| Finished Weight data                                         |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| ASCII : STX ID(2byte) RFIN ETX                               |     |                                                                                                              |     |     |     |     |     | HEX: 02 30 31 52 46 49 4E 03  |     |     |     |     |     |     |
| Response                                                     |     | STX ID RFIN P decimal point(1byte) +/- Finished weight(7byte) ETX                                            |     |     |     |     |     |                               |     |     |     |     |     |     |
| Ex) Finished weight : 2.000kg                                |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                          | ID  | R                                                                                                            | F   | I   | N   | P   | 3   | +                             | 0   | 0   | 0   | 2   | 0   |     |
| 02h                                                          | 30h | 31h                                                                                                          | 52h | 46h | 49h | 4Eh | 50h | 33h                           | 2Bh | 30h | 30h | 30h | 32h | 30h |
| 0                                                            | 0   | ETX                                                                                                          |     |     |     |     |     |                               |     |     |     |     |     |     |
| 30h                                                          | 30h | 03h                                                                                                          |     |     |     |     |     |                               |     |     |     |     |     |     |
| Current Time data                                            |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| ASCII : STX ID(2byte) RTIM ETX                               |     |                                                                                                              |     |     |     |     |     | HEX : 02 30 31 52 54 49 4D 03 |     |     |     |     |     |     |
| Response                                                     |     | STX ID RTIM Current Time(6byte) ETX                                                                          |     |     |     |     |     |                               |     |     |     |     |     |     |
| 예) 시간 : 12:00:00                                             |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                          | ID  | R                                                                                                            | T   | I   | M   | 1   | 2   | 0                             | 0   | 0   | 0   | 0   | 0   | ETX |
| 02h                                                          | 30h | 31h                                                                                                          | 52h | 54h | 49h | 4Dh | 31h | 32h                           | 30h | 30h | 30h | 30h | 03h |     |
| Current date data                                            |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| ASCII : STX ID(2byte) RDAT ETX                               |     |                                                                                                              |     |     |     |     |     | HEX : 02 30 31 52 44 41 54 03 |     |     |     |     |     |     |
| Response                                                     |     | STX ID RDAT Current Date(6byte) ETX                                                                          |     |     |     |     |     |                               |     |     |     |     |     |     |
| Ex) Date : Aug 12 <sup>th</sup> ,2014                        |     |                                                                                                              |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                          | ID  | R                                                                                                            | D   | A   | T   | 1   | 4   | 0                             | 1   | 0   | 1   | ETX |     |     |
| 02h                                                          | 30h | 31h                                                                                                          | 52h | 44h | 41h | 54h | 31h | 34h                           | 30h | 31h | 30h | 31h | 03h |     |



# SI 460C DIN SIZE WEIGHING INDICATOR

| Tare data                      |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
|--------------------------------|-----|----------------------------------------------------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|--|
| ASCII : STX ID(2byte) RTAR ETX |     |                                                                      |     |     |     |     |     | HEX : 02 30 31 52 54 41 52 03 |     |     |     |     |     |     |  |
| Response                       |     | STX ID RTAR P decimal point(1byte) +/- (1byte) TARE value(7byte) ETX |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| Ex) TARE : 2.000kg             |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| STX                            | ID  | R                                                                    | T   | A   | R   | P   | 3   | +                             | 0   | 0   | 0   | 2   | 0   |     |  |
| 02h                            | 30h | 31h                                                                  | 52h | 54h | 41h | 52h | 50h | 33h                           | 2Bh | 30h | 30h | 30h | 32h | 30h |  |
| 0                              | 0   | ETX                                                                  |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 30h                            | 30h | 03h                                                                  |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| SP 1 data                      |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| ASCII : STX ID(2byte) RSP1 ETX |     |                                                                      |     |     |     |     |     | HEX : 02 30 31 52 53 50 31 03 |     |     |     |     |     |     |  |
| Response                       |     | STX ID RSP1 P1 decimal point(1byte) SP 1 value(7byte) ETX            |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 예) SP1 value: 5.000kg          |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| STX                            | ID  | R                                                                    | S   | P   | 1   | P   | 3   | 0                             | 0   | 0   | 5   | 0   | 0   |     |  |
| 02h                            | 30h | 31h                                                                  | 52h | 53h | 50h | 31h | 50h | 33h                           | 30h | 30h | 30h | 35h | 30h | 30h |  |
| 0                              | ETX |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 30h                            | 03h |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| SP 2 data                      |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| ASCII : STX ID(2byte) RSP2 ETX |     |                                                                      |     |     |     |     |     | HEX : 02 30 31 52 53 50 32 03 |     |     |     |     |     |     |  |
| Response                       |     | STX ID RSP2 P decimal point(1byte) SP 2 value (7byte) ETX            |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 예) SP2 value: 6.000kg          |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| STX                            | ID  | R                                                                    | S   | P   | 2   | P   | 3   | 0                             | 0   | 0   | 6   | 0   | 0   |     |  |
| 02h                            | 30h | 31h                                                                  | 52h | 53h | 50h | 32h | 50h | 33h                           | 30h | 30h | 30h | 35h | 30h | 30h |  |
| 0                              | ETX |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 30h                            | 03h |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| SP 3 data                      |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| ASCII : STX ID(2byte) RSP3 ETX |     |                                                                      |     |     |     |     |     | HEX : 02 30 31 52 53 50 33 03 |     |     |     |     |     |     |  |
| Response                       |     | STX ID RSP3 P decimal point(1byte) SP 3 value (7byte) ETX            |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 예) SP3 value: 7.000kg          |     |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| STX                            | ID  | R                                                                    | S   | P   | 3   | P   | 3   | 0                             | 0   | 0   | 7   | 0   | 0   |     |  |
| 02h                            | 30h | 31h                                                                  | 52h | 53h | 50h | 33h | 50h | 33h                           | 30h | 30h | 30h | 37h | 30h | 30h |  |
| 0                              | ETX |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |
| 30h                            | 03h |                                                                      |     |     |     |     |     |                               |     |     |     |     |     |     |  |

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| SP 4 data                      |     |                                                           |     |     |     |     |     |                               |     |     |     |     |     |     |
|--------------------------------|-----|-----------------------------------------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) RSP4 ETX |     |                                                           |     |     |     |     |     | HEX : 02 30 31 52 53 50 34 03 |     |     |     |     |     |     |
| Response                       |     | STX ID RSP4 P decimal point(1byte) SP 4 value (7byte) ETX |     |     |     |     |     |                               |     |     |     |     |     |     |
| 예)) SP4 value: 8.000kg         |     |                                                           |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                            | ID  | R                                                         | S   | P   | 4   | P   | 3   | 0                             | 0   | 0   | 8   | 0   | 0   |     |
| 02h                            | 30h | 31h                                                       | 52h | 53h | 50h | 34h | 50h | 33h                           | 30h | 30h | 30h | 38h | 30h | 30h |
| 0                              | ETX |                                                           |     |     |     |     |     |                               |     |     |     |     |     |     |
| 30h                            | 03h |                                                           |     |     |     |     |     |                               |     |     |     |     |     |     |

| SP 1,2,3,4, data                                                           |     |                                                                                                                    |     |     |     |     |     |                               |     |     |     |     |     |     |
|----------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) RSPA ETX                                             |     |                                                                                                                    |     |     |     |     |     | HEX : 02 30 31 52 53 50 41 03 |     |     |     |     |     |     |
| Response                                                                   |     | STX ID RSPA P decimal point(1byte) SP 1 value (7byte) SP 2 value (7byte) SP 3 value (7byte) SP 4 value (7byte) ETX |     |     |     |     |     |                               |     |     |     |     |     |     |
| 예)) SP1 value: 5.000, SP2 value: 6.000, SP3 value: 7.000, SP4 value: 8.000 |     |                                                                                                                    |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                                        | ID  | R                                                                                                                  | S   | P   | A   | P   | 3   | 0                             | 0   | 0   | 5   | 0   | 0   |     |
| 02h                                                                        | 30h | 31h                                                                                                                | 52h | 53h | 50h | 41h | 50h | 33h                           | 30h | 30h | 30h | 35h | 30h | 30h |
| 0                                                                          | 0   | 0                                                                                                                  | 0   | 6   | 0   | 0   | 0   | 0                             | 0   | 0   | 7   | 0   | 0   | 0   |
| 30h                                                                        | 30h | 30h                                                                                                                | 30h | 36h | 30h | 30h | 30h | 30h                           | 30h | 30h | 37h | 30h | 30h | 30h |
| 0                                                                          | 0   | 0                                                                                                                  | 8   | 0   | 0   | 0   | ETX |                               |     |     |     |     |     |     |
| 30h                                                                        | 30h | 30h                                                                                                                | 38h | 30h | 30h | 30h | 03h |                               |     |     |     |     |     |     |

| Current weight, Input, Output state                       |     |                                                                                                                                   |     |     |     |     |     |                               |     |     |     |     |     |     |
|-----------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) RWRS ETX                            |     |                                                                                                                                   |     |     |     |     |     | HEX : 02 30 31 52 57 52 53 03 |     |     |     |     |     |     |
| Response                                                  |     | STX ID RWRS P decimal point(1byte) +/- (1byte) current weight(7byte) INPUT1,2,3,4(4byte) OUTPUT1,2,3,4(4byte) ETX (ON : 1 OF : 0) |     |     |     |     |     |                               |     |     |     |     |     |     |
| 예)) Weight : 7.000kg, INPUT : IN1,IN3, OUTPUT : OUT2,OUT4 |     |                                                                                                                                   |     |     |     |     |     |                               |     |     |     |     |     |     |
| STX                                                       | ID  | R                                                                                                                                 | W   | R   | S   | P   | 3   | +                             | 0   | 0   | 0   | 7   | 0   |     |
| 02h                                                       | 30h | 31h                                                                                                                               | 52h | 57h | 52h | 53h | 50h | 33h                           | 2Bh | 30h | 30h | 30h | 37h | 30h |
| 0                                                         | 0   | 1                                                                                                                                 | 0   | 1   | 0   | 0   | 1   | 0                             | 1   | ETX |     |     |     |     |
| 30h                                                       | 30h | 31h                                                                                                                               | 30h | 31h | 30h | 30h | 31h | 30h                           | 31h | 03h |     |     |     |     |

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## 6-1-9. Write Command Detail

| Zero (same as "ZERO" key)                                                                |                                                   |
|------------------------------------------------------------------------------------------|---------------------------------------------------|
| ASCII : STX ID(2byte) WZER ETX                                                           | HEX : 02 30 31 57 5A 45 52 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| TARE                                                                                     |                                                   |
| ASCII : STX ID(2byte) WTAR ETX                                                           | HEX : 02 30 31 57 54 41 52 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| TARE reset                                                                               |                                                   |
| ASCII : STX ID(2byte) WTRS ETX                                                           | HEX : 02 30 31 57 54 52 53 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| HOLD                                                                                     |                                                   |
| ASCII : STX ID(2byte) WHOL ETX                                                           | HEX : 02 30 31 57 48 4F 4C 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| HOLD reset                                                                               |                                                   |
| ASCII : STX ID(2byte) WHRS ETX                                                           | HEX : 02 30 31 57 48 52 53 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| PRINT                                                                                    |                                                   |
| (Data will be transferred to the port which is set as print mode -Function 303,310 - 02) |                                                   |
| ASCII : STX ID(2byte) WPRT ETX                                                           | HEX : 02 30 31 57 50 52 54 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| Grand Total Print                                                                        |                                                   |
| (Data will be transferred to the port which is set as print mode -Function 303,310 - 02) |                                                   |
| ASCII : STX ID(2byte) WGPR ETX                                                           | HEX : 02 30 31 57 47 50 52 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| Grand Total Delete                                                                       |                                                   |
| ASCII : STX ID(2byte) WGTC ETX                                                           | HEX : 02 30 31 57 47 54 43 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| Run                                                                                      |                                                   |
| ASCII : STX ID(2byte) WSTR ETX                                                           | HEX : 02 30 31 57 53 54 52 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |
| Stop                                                                                     |                                                   |
| ASCII : STX ID(2byte) WSTP ETX                                                           | HEX : 02 30 31 57 53 54 50 03                     |
| Response                                                                                 | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |

## SI 460C DIN SIZE WEIGHING INDICATOR

| Date Setting                                    |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------------------|---------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) WDAT data(6byte) ETX      |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ex) Date : Aug 12 <sup>th</sup> ,2014           |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                             | ID                                                | W   | D   | A   | T   | 1   | 4   | 0   | 1   | 0   | 2   | ETX |     |     |
| 02h                                             | 30h                                               | 31h | 57h | 44h | 41h | 54h | 31h | 34h | 30h | 31h | 30h | 32h | 03h |     |
| Response                                        | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Time Setting                                    |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ASCII : STX ID(2byte) WTIM time(6byte) ETX      |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) 12:00:00                                     |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                             | ID                                                | W   | T   | I   | M   | 1   | 2   | 0   | 0   | 0   | 0   | ETX |     |     |
| 02h                                             | 30h                                               | 31h | 57h | 54h | 49h | 4Dh | 31h | 32h | 30h | 30h | 30h | 30h | 03h |     |
| Response                                        | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |
| SP 1 setting                                    |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ASCII : STX ID(2byte) WSP1 SP1 value(7byte) ETX |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) SP1 : 5.000kg (decimal point 0.000)          |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                             | ID                                                | W   | S   | P   | 1   | 0   | 0   | 0   | 5   | 0   | 0   | 0   | ETX |     |
| 02h                                             | 30h                                               | 31h | 57h | 53h | 50h | 31h | 30h | 30h | 30h | 35h | 30h | 30h | 30h | 03h |
| Response                                        | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |
| SP 2 setting                                    |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ASCII : STX ID(2byte) WSP2 SP2 value(7byte) ETX |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) SP2 : 6.000kg (decimal point 0.000)          |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                             | ID                                                | W   | S   | P   | 2   | 0   | 0   | 0   | 6   | 0   | 0   | 0   | ETX |     |
| 02h                                             | 30h                                               | 31h | 57h | 53h | 50h | 32h | 30h | 30h | 30h | 36h | 30h | 30h | 30h | 03h |
| Response                                        | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |
| SP 3 setting                                    |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ASCII : STX ID(2byte) WSP3 SP3 value(7byte) ETX |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) SP3 : 7.000kg (decimal point 0.000)          |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                             | ID                                                | W   | S   | P   | 3   | 0   | 0   | 0   | 7   | 0   | 0   | 0   | ETX |     |
| 02h                                             | 30h                                               | 31h | 57h | 53h | 50h | 33h | 30h | 30h | 30h | 37h | 30h | 30h | 30h | 03h |
| Response                                        | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |

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| SP 4 setting                                                                                           |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ASCII : STX ID(2byte) WSP4 SP4 value(7byte) ETX                                                        |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) SP4 : 8.000kg (decimal point 0.000)                                                                 |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                                                                                    | ID                                                | W   | S   | P   | 4   | 0   | 0   | 0   | 8   | 0   | 0   | 0   | ETX |     |
| 02h                                                                                                    | 30h                                               | 31h | 57h | 53h | 50h | 34h | 30h | 30h | 30h | 38h | 30h | 30h | 30h | 03h |
| Response                                                                                               | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |
| SP 1,2,3,4 setting                                                                                     |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ASCII : STX ID(2byte) WSPA SP1 value (7byte) SP2 value (7byte) SP3 value (7byte) SP4 value (7byte) ETX |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 예) SP1 5.000kg SP2 6.000kg SP3 7.000kg SP4 8.000kg (decimal point 0.000일 때)                            |                                                   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| STX                                                                                                    | ID                                                | W   | S   | P   | A   | 0   | 0   | 0   | 5   | 0   | 0   | 0   | 0   | 0   |
| 02h                                                                                                    | 30h                                               | 31h | 57h | 53h | 50h | 41h | 30h | 30h | 30h | 35h | 30h | 30h | 30h | 30h |
| 0                                                                                                      | 0                                                 | 6   | 0   | 0   | 0   | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 0   | 0   |
| 30h                                                                                                    | 30h                                               | 36h | 30h | 30h | 30h | 30h | 30h | 30h | 37h | 30h | 30h | 30h | 30h | 30h |
| 0                                                                                                      | 8                                                 | 0   | 0   | 0   | ETX |     |     |     |     |     |     |     |     |     |
| 30h                                                                                                    | 38h                                               | 30h | 30h | 30h | 03h |     |     |     |     |     |     |     |     |     |
| Response                                                                                               | Normal : STX ID ACK ETX    Error : STX ID NAK ETX |     |     |     |     |     |     |     |     |     |     |     |     |     |

## Tip How to Calculate Check sum

Sum the value from "STX" to "ETX" and converts to ASCII(2byte) and transfer.

Convert the Sum value(HEX) to ASCII and transmit(28byte) .

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). the rest of result is A6h.

Calculated remainder value is A6h, then convert A6h to ASCII, 41(A), 36(6), and transfer

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### 6-1-10. Modbus Memory Map

**Tip**

- RO : Read Only
- RW : Read Write
- Each P/N's set point can't over max capacity of Indicator.  
ex) 35.00kg = 3,500 (0xDAC)
- When you input date and time, it should be 6digit.  
ex) 1<sup>st</sup> January 2014 = 140101 (0x22345)  
15(H) : 50(M) : 17(S) = 155017 (0x25D89)
- Refer the memory register for regarding 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.

| Add-ress | Leng-th | Feature | Description        |
|----------|---------|---------|--------------------|
| 1        | 2       | RO      | Capacity           |
| 3        | 2       | RO      | None(0x00)         |
| 5        | 2       | RO      | Analog Value       |
| 7        | 2       | RO      | Span Value         |
| 9        | 1       | RO      | Division           |
| 10       | 1       | RO      | Decimal point      |
| 11       | 2       | RO      | Current Weight     |
| 13       | 2       | RO      | Tare Weight        |
| 15       | 2       | RO      | Measured Weight    |
| 17       | 2       | RO      | Digital input      |
| 19       | 2       | RO      | Lamp               |
| 21       | 2       | RO      | Error              |
| 23       | 1       | RO      | Weighing Mode      |
| 24       | 1       | RO      | Weighing Step      |
| 33       | 2       | RO      | Grand total Count  |
| 35       | 2       | RO      | Grand total Weight |

|     |   |    |              |
|-----|---|----|--------------|
| 437 | 2 | RW | Date         |
| 439 | 2 | RW | Time         |
| 441 | 1 | RW | Key value    |
| 443 | 1 | RW | Relay output |
| 445 | 2 | RW | SP 1         |
| 447 | 2 | RW | SP 2         |
| 449 | 2 | RW | SP 3         |
| 451 | 2 | RW | SP 4         |

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### 6-1-11. Modbus memory register

(1) Digital input register (Address : 17, Length : 2)

| 0       | 1       | 2       | 3       |
|---------|---------|---------|---------|
| INPUT 1 | INPUT 2 | INPUT 3 | INPUT 4 |

(2) Lamp register (Address : 19, Length : 2)

| 0      | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|--------|------|------|------|------|------|------|------|
| Steady | Zero | Tare | OUT1 | OUT2 | OUT3 | OUT4 | Hold |

(3) Error register (Address : 21, Length : 2)

| 0                 | 1            | 2                  |
|-------------------|--------------|--------------------|
| Loadcell<br>Error | Over<br>Load | Set point<br>Error |

(4) Key register (Address : 441, Length : 1)

| 0     | 1    | 2    | 3    | 4               | 5    | 6               | 7     | 8 | 9 | 10                      | 11                       |
|-------|------|------|------|-----------------|------|-----------------|-------|---|---|-------------------------|--------------------------|
| Start | Stop | Zero | Tare | Tare<br>Removal | Hold | Hold<br>Removal | Print | - | - | Grand<br>total<br>Print | Grand<br>total<br>delete |

(5) Relay output register (Address : 443, Length : 1)

| 0    | 1    | 2    | 3    |
|------|------|------|------|
| OUT1 | OUT2 | OUT3 | OUT4 |

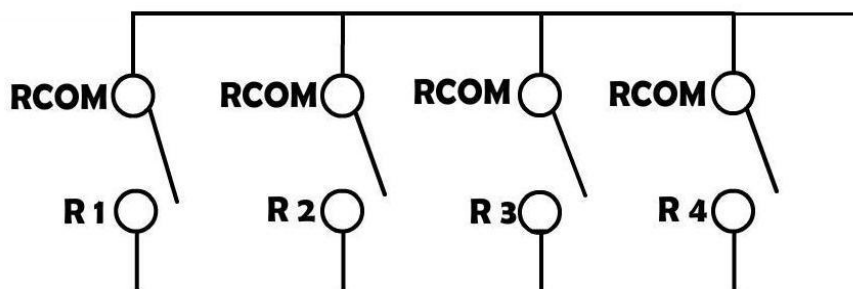
## 6-2. Relay output

4pcs relay output : Each relay's function can be set under Function 226~229.

### 6-2-1. Relay specification

|                 |          |
|-----------------|----------|
| Coiling Rating  | 12VDC    |
| Contact Ratings | 1A 24VDC |

### 6-2-2. Relay output internal circuit



### Tip

If you enter to Calibration or Test mode, Relay output will be off.



If you use higher voltage than relay specification, indicator might be damaged.



## 6-3. Analogue I-Output Interface : 4~20mA (Option)

This output card converts weight value to Analog output signal (4~20mA) and transfers to external devices(Recorder, P.L.C), controlled by voltage output.

### 6-2-1. Specification

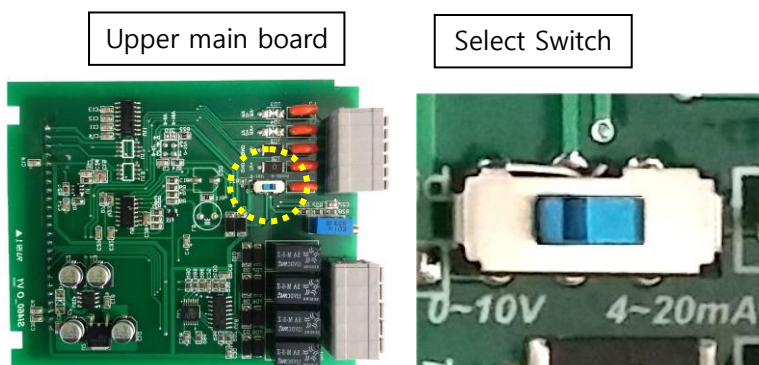
|                         |                                         |
|-------------------------|-----------------------------------------|
| Output Current          | Output Range :2~22mA (Default : 4~20mA) |
| Accuracy                | More than 1/5,000                       |
| Temperature Coefficient | 0.01%°C                                 |
| . Max Loaded Impedance  | 500Ω MAX                                |

**Tip**

Under Calibration mode or "CELL-ERR" condition, Analogue output will not activated.  
If the output is deactivated, the last output signal value will be hold until next activation.

### 6-2-2. Output Adjustment

- ① Default analog output value is 4mA(weight zero) , 20mA(Full using capa).
- ② The analogue output value is adjusted with DIGITAL MULTI-METER.



Check the setting to use the analog output switch in the upper main board.

(Default : 4~20mA)

#### ③ How to adjust analog output value.

Step1) Connect Digital multi meter to the Indicator (A out terminal).

Step2) Enter "F-function HF14 Minimum Analog Output Setting" mode.

Step3) Adjust the displaying value of indicator with keys(by 9,999) to make Digital multi meter's value as minimum(ex:4mA) and save.(When the SI 460C indicate about 5,200 , the Digital multi meter indicates about 4mA)

Step4) Enter "F-function HF15 Maximum Analog Output Setting" mode

Step5) after connect digital multi meter to the indicator, then adjust the displaying value of indicator with keys (by 32,768) to make Digital multi meter's value as maximum (ex:20mA).

※ This D/A Converter has Max 1/5,000 accuracy, so this output is not suitable for high accuracy application, more than 1/5,000.

## 6-4. Analog V-Output Interface :0~10V (Option)

This output card converts weight value to Analog output signal (0~10V) and transfers to external devices(Recorder, P.L.C), controlled by voltage output.

### 6-3-1. Specification

|                |                   |
|----------------|-------------------|
| Output Voltage | 0~10V DC output   |
| Accuracy       | More than 1/1,000 |

## Tip

According to display weight of indicator, analogue signal will be output.

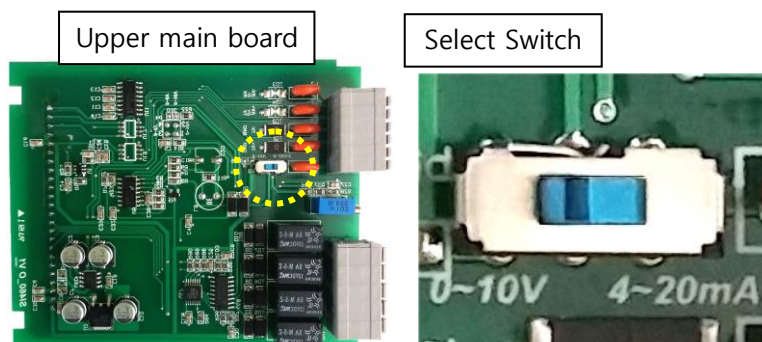
Under Calibration mode or "CELL-ERR" condition, Analogue output will not activated.

If the output is deactivated, the last output signal value will be hold until next activation

### 6-3-2. Output Adjustment

① Default analog output value is 0V(weight zero) , 10V(Full using capa).

② The analogue output value is adjusted with DIGITAL MULTI-METER.



Check the setting to use the analog output switch in the upper main board.

(Default : 4~20mA)

③ How to adjust analog output value.

Step1) Connect Digital multi meter to the Indicator (A out terminal).

Step2) Enter "F-function HF14 Minimum Analog Output Setting" mode.

Step3) Adjust the displaying value of indicator with keys(by 9,999) to make Digital multi meter's value as minimum(ex:0V) and save.(When the SI 460C indicates about 30,150 , the Digital multi meter indicates about 10V)

Step4) Enter "F-function HF15 Maximum Analog Output Setting" mode

Step5) after connect digital multi meter to the indicator, then adjust the displaying value of indicator with keys (by 32,768) to make Digital multi meter's value as maximum (ex:10V).

※ This D/A Converter has Max 1/5,000 accuracy, so this output is not suitable for high accuracy application, more than 1/5,000.

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### 6-5 Serial Print (F-function 303 or 310-02 setting) – RS-232 Serial Interface.

It can be connected with all kinds of Serial interface printer, but the printing format is already programmed and fixed with SE7200/7300 model.

#### 6-4-1. Printing Format

Using the RS-485 or 422 interface, please use convertor and converts to RS-232 and connect with Serial printer.

If you use RS-232 serial interface, connect directly without any convertor.

#### 6-4-2. English Format

|        |            |
|--------|------------|
| =====  |            |
| DATE : | 2009-05-10 |
| TIME : | 18:00:10   |
| COUNT  | WEIGHT     |
| 1      | + 1.330kg  |
| 2      | + 5.350kg  |
| 3      | + 1.380kg  |
| 4      | + 2.330kg  |

Continuous Print Format(Function 352-00)

|        |            |
|--------|------------|
| =====  |            |
| DATE : | 2009-05-10 |
| TIME : | 18:00:10   |
| COUNT  | WEIGHT     |
| 2      | + 5.350kg  |
| =====  |            |
| DATE : | 2009-05-10 |
| TIME : | 18:00:10   |
| COUNT  | WEIGHT     |
| 3      | + 1.280kg  |

Single Print Format(Function 352-01)

|                |            |
|----------------|------------|
| =====          |            |
| TOTAL          |            |
| DATE :         | 2009-05-10 |
| TIME :         | 18:00:10   |
| COUNT :        | 10         |
| TOTAL WEIGHT : | 258.145kg  |
| =====          |            |
| TOTAL DELETE   |            |
| =====          |            |

Grand Total Print

## 7. Error & Treatment

### 7-1. Load Cell Installation

| Error                                                            | Cause                                                                                                                                                                     | Treatment                                                                                         | Remarks                                                                                                                                                                                           |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight Value is unstable                                         | 1) Load cell broken<br>2) Load cell isolation resistance error<br>3) Weighing part touches other devices or some weight is on the weighing part<br>4) Summing Board Error | 1) Measure input/output resistance of Load cell.<br><br>2) Measure Load cell isolation resistance | 1. Input Resistance of "EXC+" and "EXC-" is about $400\Omega \pm 30$<br>2. Output Resistance of "SIG+" and "SIG-" is about $350\Omega \pm 3.5$<br>3. Isolate Resistance is more than $100M\Omega$ |
| Weight Value is increased regular rate, but not return to "Zero" | 1) Load cell Error<br>2) Load cell connection Error                                                                                                                       | 1) Check Load cell connection<br>2) Measure Load cell Resistance                                  |                                                                                                                                                                                                   |
| Weight Value is increased to under Zero                          | Load cell Output wire (SIG+, SIG-) is switched                                                                                                                            | Make wire correction                                                                              |                                                                                                                                                                                                   |
| "UN PASS" display                                                | Load cell broken or Indicator connection Error                                                                                                                            | Load cell Check<br>Load cell connection Check                                                     |                                                                                                                                                                                                   |
|                                                                  | Power was "ON" when some weight is on the load cell.                                                                                                                      | Remove weight on the Load cell                                                                    |                                                                                                                                                                                                   |
| "OL" or "UL" display(Over Load)                                  | 1) Load cell broken or Indicator connection Error<br>2) Loading over than Max Capacity                                                                                    | 1) Load cell Check<br>2) Load cell connection Check<br>3) Remove over loaded weight               |                                                                                                                                                                                                   |

## SI 460C DIN SIZE WEIGHING INDICATOR

### 7-2. Calibration Process

| Display      | Cause                                                                                                    | Treatment                                                                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Err01</i> | When Max capacity/digit value is over 20,000                                                             | Re-input the Max Capacity, less than 20.00<br>(Max Capacity / Digit)                                                                                                     |
| <i>Err04</i> | Standard weight value is over than Max Capacity                                                          | Re-input Standard weight value with Number keys, under Max Capacity                                                                                                      |
| <i>Err05</i> | Standard weight value is less than 10% of Max Capacity                                                   | Re-input Standard weight value with Number keys, more than 10% of Max Capacity                                                                                           |
| <i>Err06</i> | Amp. Gain is too big                                                                                     | Check standard weight's weight with set value.<br>If there is difference between set value and real weight, please re-input the value (set value is too small)           |
| <i>Err07</i> | Amp. Gain is too small                                                                                   | Check standard weight's weight with set value.<br>If there is difference between set value and real weight, please re-input the value (set value is too big)             |
| <i>Err08</i> | Under "F-function" model, set value is "N.A"                                                             | Check the correct value and re-input                                                                                                                                     |
| <i>Err-A</i> | When there is continuous vibration on the weighing part,, indicator cannot process calibration any more. | <ul style="list-style-type: none"> <li>- Find vibration cause and remove</li> <li>- Load cell check</li> <li>- Load cell cable and connecting condition check</li> </ul> |

## 7-3. Digital Weighing Indicator

| Display                                    | Cause                                                                                                                                                                                                                                                                                                                                                  | Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>"CELL - Er"</p> <p>or</p> <p>"OVER"</p> | <p>1. Load cell Error</p> <p>2. Load cell cable Error</p> <p>3. Load cell connection Error</p> <p>4. A/D Board Error</p> <p>5. If Analogue value is over 1,040,000.</p> <p>※ When weigh "-" value, If it is over set max capa, "OVER" is displayed.</p> <p>Ex) Even though set max capa is "100" and it is over "-100", "OVER" is displayed.</p>       | <p>1. Under "TEST" mode 1, check analogue value. If you cannot get any analogue value or there is no change although adding load, please check load cell, load cell cable, connection conditions first.</p> <p>2. Replace another load cell, and check the indicator condition. If you have same problem, please replace new indicator and check A/D board error.</p> <p>3. Try to connect the indicator's A/D with the other indicator.</p> <p>4. Check the power and connection of terminal.</p> |
| "UNPASS"                                   | <p>1. Power is ON, when some materials are on weighing part.</p> <p>※ Under "Normal Mode", if there are more than 20% loading of Max capacity, "Un-Pass" display will be appeared and indicator will stay until removing the load.</p> <p>※ Setting Back-up mode it can memory empty value, and it becomes set value without displaying "Un-pass")</p> | <p>1. If you set "Normal Mode", please check weighing part empty or not before turn on the power. If there are some materials in/on weighing part, please remove those materials and turn on the power.</p> <p>2. Please try to set F-function 102-02(Back-up) mode so that the indicator can remember first empty value.</p>                                                                                                                                                                      |
| "SET"                                      | When Power is on, "SET" displays. It means EEPROM has some problem.                                                                                                                                                                                                                                                                                    | Please contact the distributor or Head Office.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| "HALLT"                                    | H/W has some problem.                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| "E-Err"                                    | The dead Battery                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

※ Under "CELL - Er", Zero key, Tare key, Hold key and print key will not be activated.

## SI 460C DIN SIZE WEIGHING INDICATOR

| WARRANTEE CERTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                            |                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------|---------------------------------------------------------------------------------------|
| <p>This product is passed "Sewhacnm's strict quality test.</p> <p>If there is defect of manufacturing or abnormal detection within warrantee period, please contact our Agent or Distributor with this Warrantee certificate.</p> <p>Then, we will repair or replace free of charge.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                            |                                                                                       |
| WARRANTEE CLAUSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                            |                                                                                       |
| <p><b>1. The Warrantee period, we can guarantee, is one(1) year from your purchasing date</b></p> <p><b>2. Warrantee Exception Clause</b></p> <ul style="list-style-type: none"> <li>- Warrantee period is expired.</li> <li>- Any kinds of Mal-function or defection caused by Modification or Repair without Sewhacnm's permission.</li> <li>- Any kinds of Mal-function, Defection, or External damage, caused by operator</li> <li>- Any kinds of Mal-function, Defection, caused by using spare part from Non-Authorized Distributor or Agent.</li> <li>- Any kinds of Mal-function, Defection, caused by not following Warnings or Cautions mentioned on this manual.</li> <li>- Any kinds of Mal-function, Defection caused by "Force Majeur", like Fire, Flood.</li> <li>- Without presentation of this <b>"Warrantee Certification"</b>.</li> </ul> <p><b>3. Other</b></p> <ul style="list-style-type: none"> <li>- Any kinds of "Warrantee Certification" without authorized Stamp is out of validity</li> </ul> |                     |                            |                                                                                       |
| <p><b>SEWHACNM Co.,Ltd.</b></p> <p>#504, 302Dong, 397, Seokcheon-ro, Ojeong-gu, Bucheon-si, Gyeonggi-do, Korea</p> <p><b>Made in KOREA</b></p> <p>Website : <a href="http://www.sewhacnm.co.kr">http://www.sewhacnm.co.kr</a> ,</p> <p>Email : <a href="mailto:sales@sewhacnm.co.kr">sales@sewhacnm.co.kr</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Product</b>      | Digital Weighing Indicator |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Model</b>        | SI 460C                    |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Serial No.</b>   |                            |                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | AUTHORIZED<br>STAMP |                            |  |