F805A *WEIGHING CONTROLLER*

OPERATION MANUAL

UNIPULSE

26 Nov. 2007
Rev. 1.00

Welcome to Unipulse World

We, Unipulse Corporation, are proud to put F805A Weighing Controller under your command. Please give this important manual a permanent place on your desk top within your reach, so that it will help the F805A to be at your service with the best of its capability at any time.

Above all, please pay your most careful attention to "**General Instruction**" as well as "**Warning"** on handling of lithium battery (Refer to Trouble Shooting - Short capacity of lithium battery), described on the following pages, which assures safe and successful operation of your production line.

General Instruction

The following instruction must be carefully observed, otherwise injury to human body and/or damage to installation may occur.

● Do not disassemble F805A unit for repair or modification.

● Be sure to ground the protective ground terminal.

● Take an interval of more than 5 seconds when repeating plug in/plug out.

● Disengage power plug from electricity outlet during the following work.
  * attaching and detaching option connector
  * hooking up to terminal board
  * connection of grounding wire

● Use shielded cable for connection with load cell unit, input-output signal, RS-232C, SI/F II and other options.

● Before connection to Input Signal Terminal Board, confirm name of each signal corresponds to respective terminal number, and power supply is off.

● Before switching on, make sure wiring and connection work are correctly made.

● Make sure supply voltage to F805A unit is correct.

● Appropriate and careful shielding measures must be provided for using F805A unit adjacent to the following devices.
  * main power supply line
  * strong electrical and magnetic field generating device
  * devices which tend to generate noise from static charge, relay unit etc.

● Avoid use of F805A unit in the area such as:
  * exposed to direct sun shine
  * ambient temperature and humidity exceeds specified limit
  * existence of corrosive and/or combustible gas
  * hazardous area by dust, salinity, iron dust like filings, and others
  * splashing of water, oil and chemical liquid
  * vibration and physical shocks to F805A unit

● Warning on handling the lithium battery used in F805A

Handle the used lithium battery in F805A very carefully.

* Never throw it into fire.
* Never try to break it up.
* Never press it with strong force to cause deformation.
* Avoid any handling in rough manner.

These improper handling may cause explosion, fire or leakage of dangerous liquid frombattery, and may be a very serious accident resulting in severe injury to human body or even death.

Lithium battery used in the F805A unit;

Type : CR14250SE manufactured by Sanyo Electric, or equivalent
Voltage : 3 volts
Capacity : 850 mAh

● cautions of transportation

When you send F805A by repair etc., please take sufficient measures against a shock.

● Input Signal Terminal Board

⚠ Notice

Connection to Input Signal Terminal Board should be done correctly after checking name of signal and number of terminal board carefully.
When wiring to connect input signal board , cut the power supply to main body.

RoHS-compliant product

The parts and attachments (including the instruction manual, packaging box, etc.) used for this unit are compliant with the RoHS Directive restricting the use of hazardous substances with regard to adverse effects on the environment and human body.

Please inquire of our sales person about the RoHS-compliance of the option.

What is RoHS?

It is an abbreviation for Restriction on Hazardous Substances, which is implemented by the European Union (EU). The Directive restricts the use of six specific substances in electric and electronic equipment handled within EU borders. The six substances are lead, mercury, cadmium, hexavalent chromium, PBB (polybrominated biphenyls), and PBDE (polybrominated diphenyl ethers).

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1.Features

1-1. Features in general

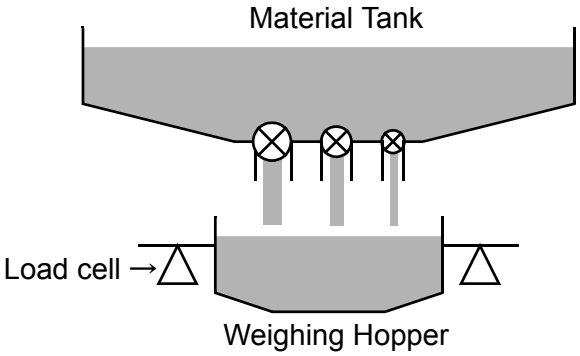
F805A weighing controller is designed for quick and accurate weight control of material. Use of F805A is not limited to packaging line but can be of help to your production wherever high speed and accurate weight control is vital.

During the course of weigh/feed process, from material loading up to discharge from hopper, easy setting of many control parameters through touch screen makes F805A to serve your individual need efficiently.

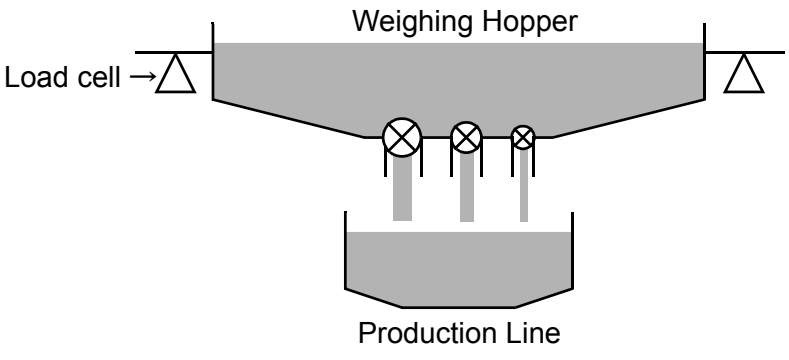
1-1-1. Feed Weighing and Discharge Weighing

Two types of weigh and control of material quantity, i.e. "feed weighing" and "discharge weighing" are used by F805A.

Feed weighing.....to weigh and control quantity of material being loaded from material tank into weighing hopper with load cell device.



Discharge weighing....to weigh and control quantity of material being discharged from weighing hopper to production line..

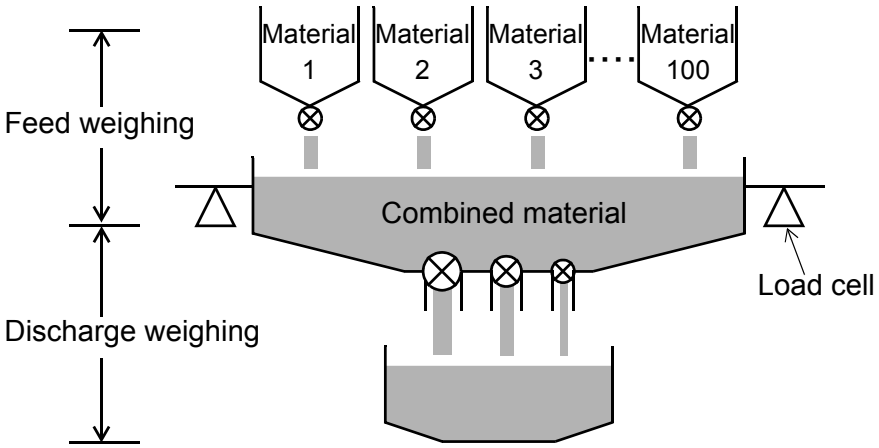


1-1-2. Combined use of Feed/Discharge weighing

Feed weighing and Discharge weighing can be switched over each other during weighing process. Such switching can be made either through touch screen or by a signal from control connector on rear panel of the unit.

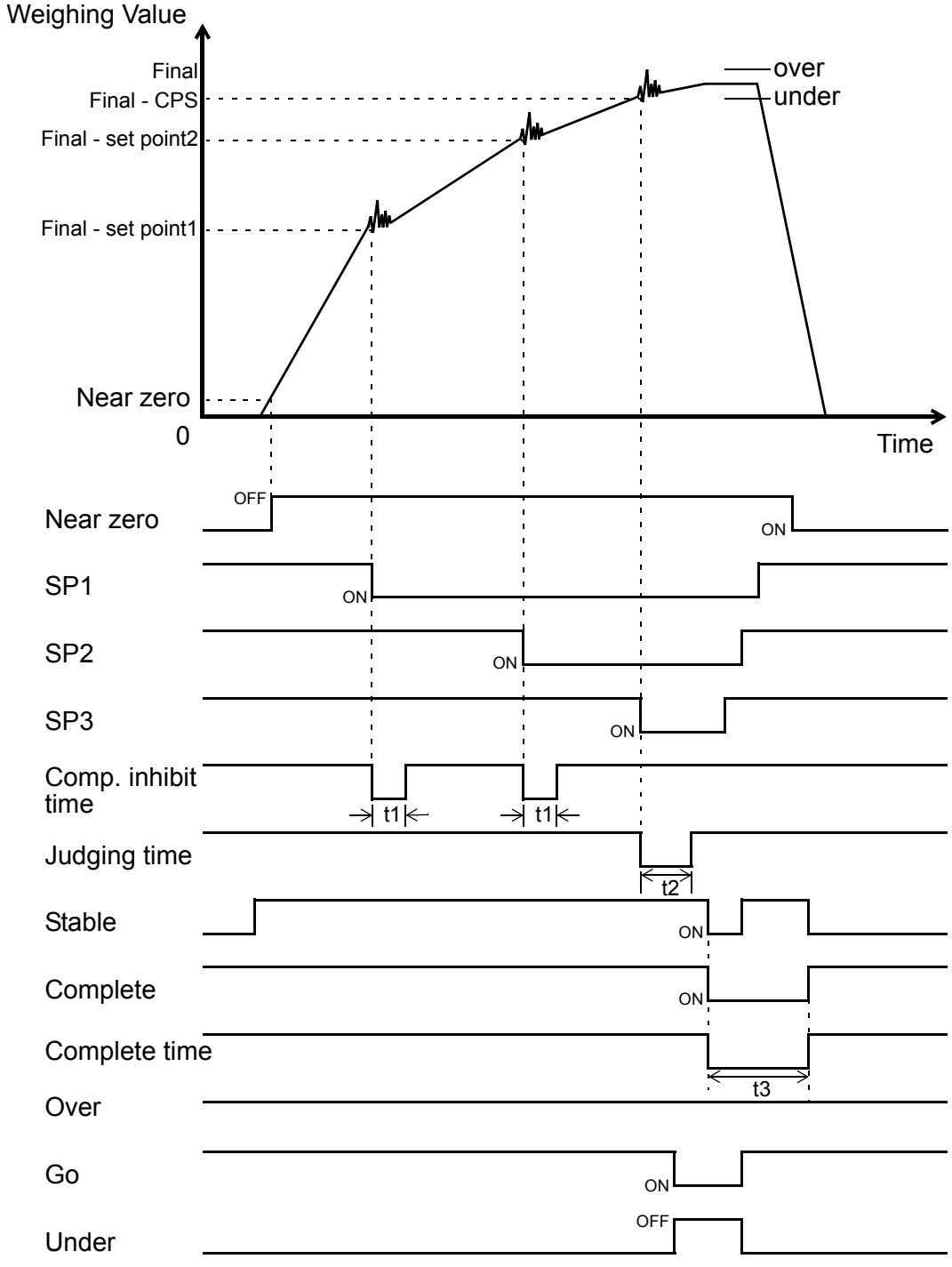
Taking advantage of the switching over function between them, F805A controls feeding predetermined quantity of different ingredient from bin and formulate a batch of material blend in weighing hopper. F805A can store even 100 sets of ingredient formula. Thus, versatility of F805A is widely enhanced. (See sketch below)

Multi-ingredient batching



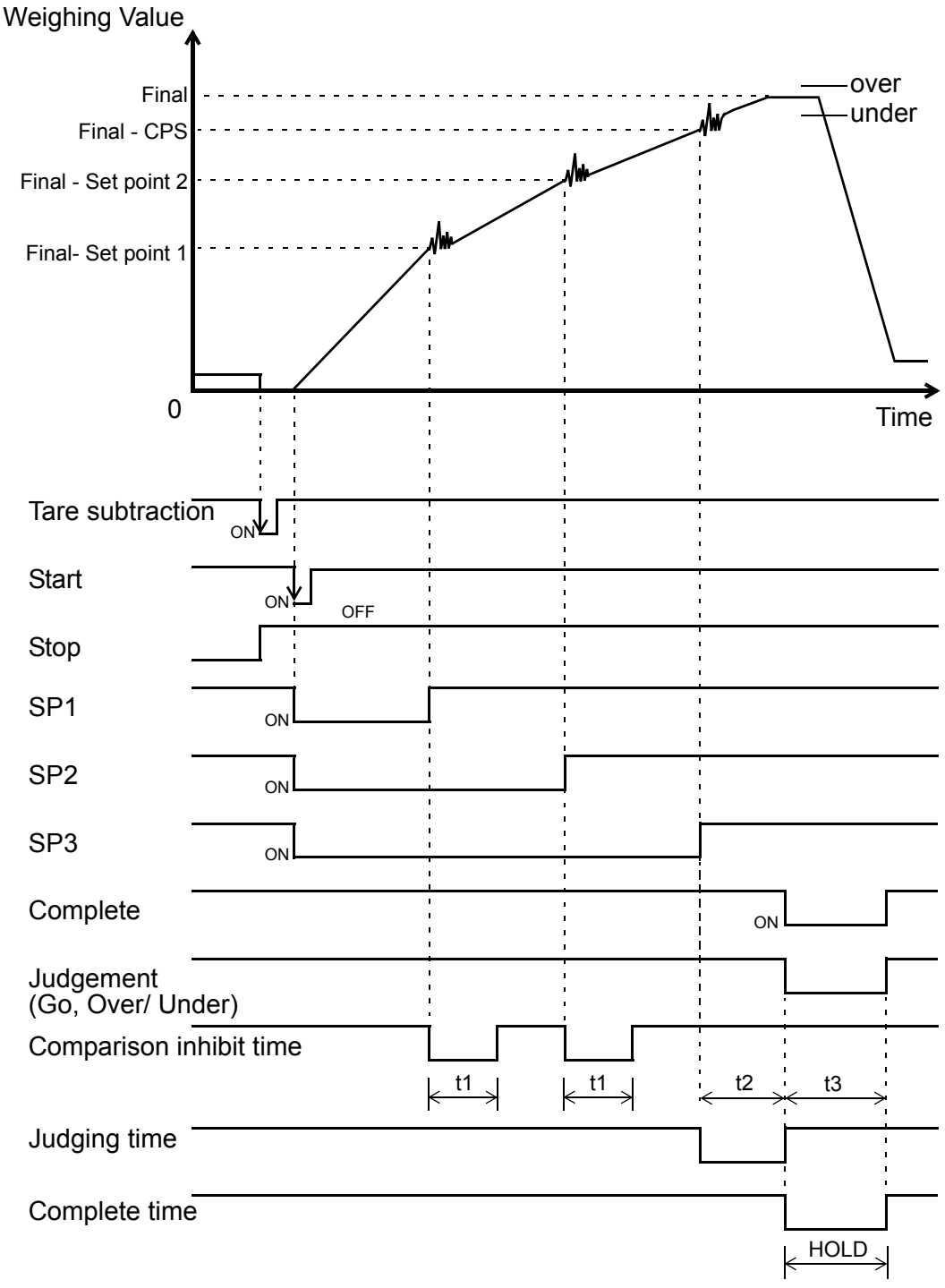
1-2. Type of control to obtain constant weight

a) “Simple Comparison” is a ”weight differential detection” type control. Control procedure is shown below. It is a controlling method that to compare on-weighing value and the set target weight parameter constantly. When weighing value reaches to one of the set parameters then relevant output signal turns on.



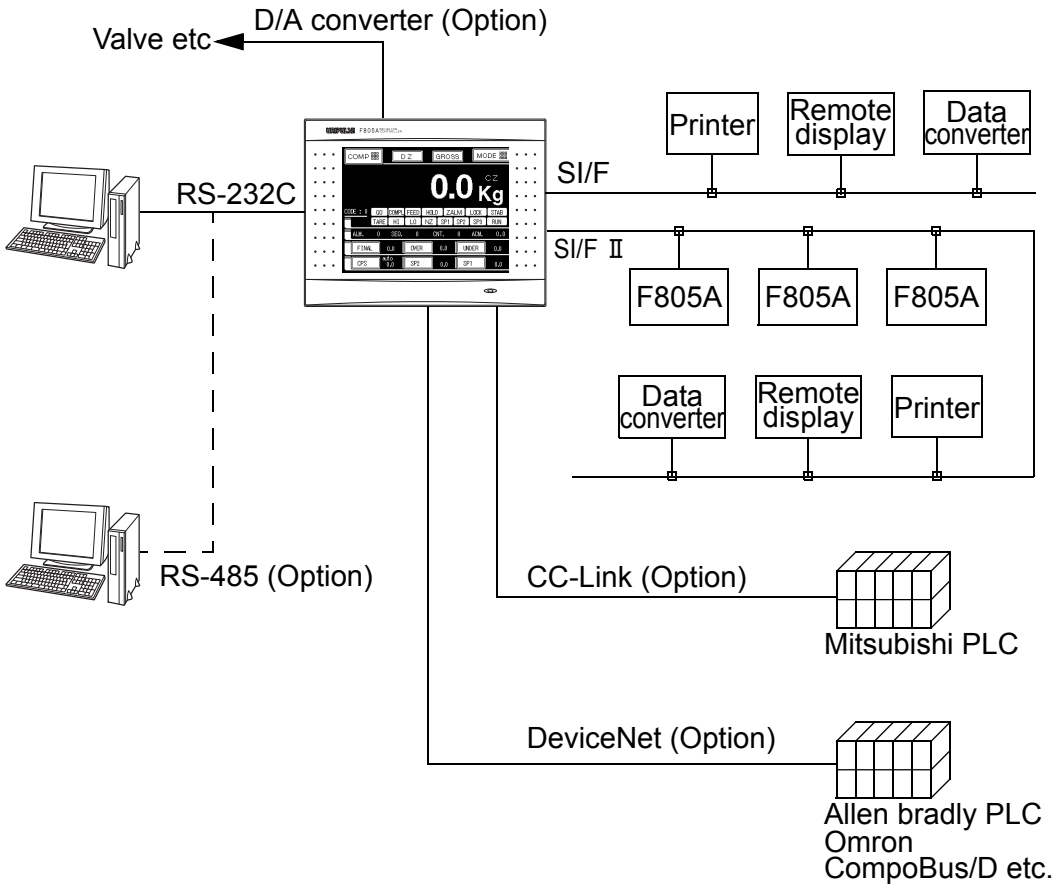
b) “Sequential Control” cycle begins by “start” signal input and completes weighing procedure by self-contained sequence program. Such “start” signal may be input by Control I/O or pressing Start tag on touch screen. With the signal, weighing sequence SP-1,SP-2 and SP-3 turns on simultaneously. When the weight reaches to respective pre-set value, relevant signal turns off sequentially.

In “Sequence Control” operation, F805A performs PLC function to control all weighing process without help from outside sequencer.



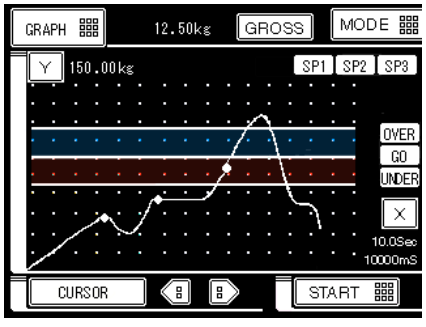
1-3. Interfaces of Weighing Controller

In order to strengthen serviceability, F805A can communicate with variety of peripheral equipment through standard or optional interface module. Sketch below shows example of such interfacing.



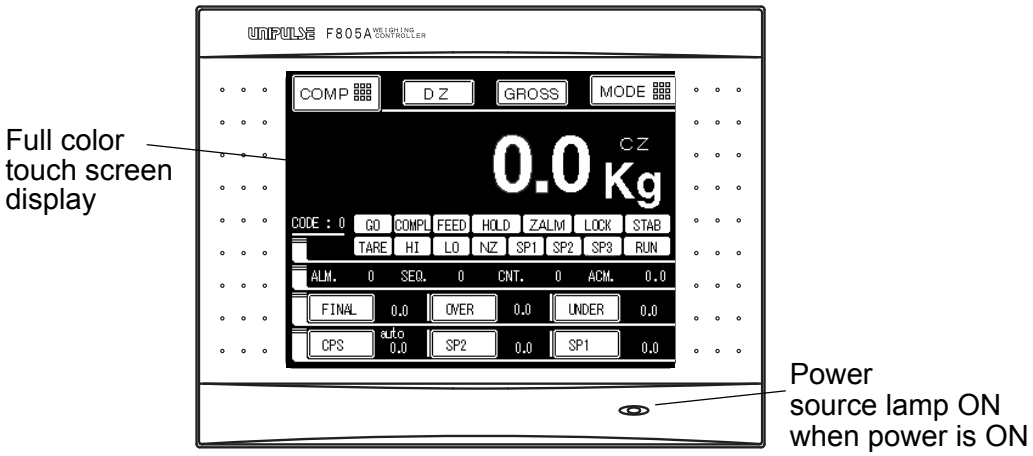
1-4. Graphic

Input signal can be shown in wave form on"Graphic Display Mode Screen"on front panel. It will give you instantaneous visual perception of on-going procedure, and give you important information for production control. For further information, refer to page 75 of this manual.



2. Appearance Description

2-1. Front Panel



Full color-touch screen-graphic display

The panel-mount configuration offers maximum mounting flexibility. There are three different display screens during systems operation, 23 screens for selection, 113 screens for setting items and few hundred screens for setting value or performance.

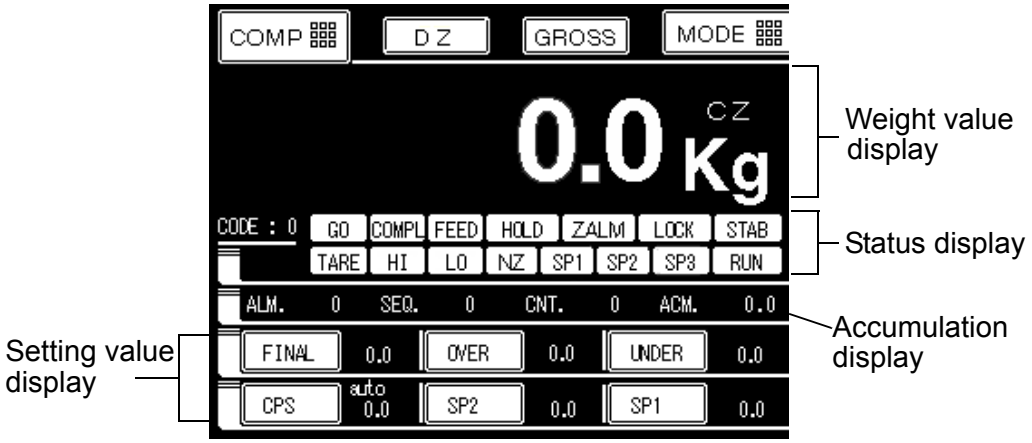
COMP, MESSAGE, GRAPH:

COMP, MESSAGE and GRAPH are the three different display screens. The meter will display which screen you are (COMP, MESSAGE, GRAPH), to change the screen press the button on the upper left-hand corner.

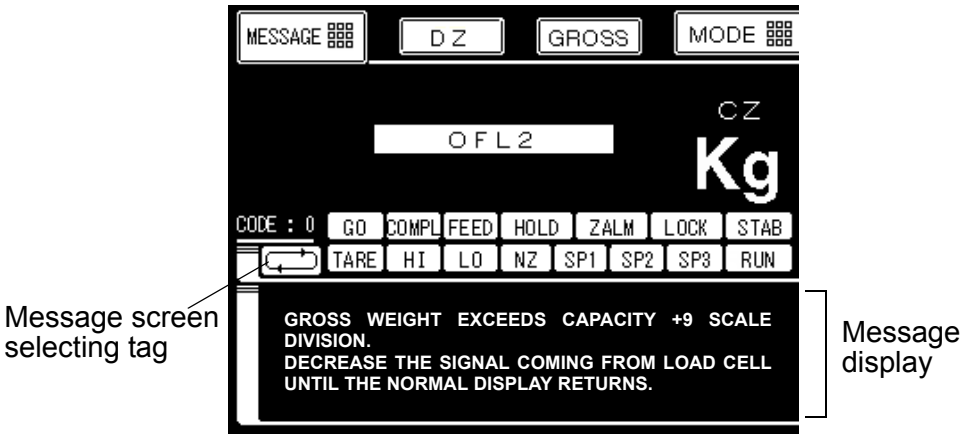
MODE, BACK:

To change setting value, or select setting items, from any screen goes back to display screen by pressing (MODE, BACK) button on the upper right-hand corner.

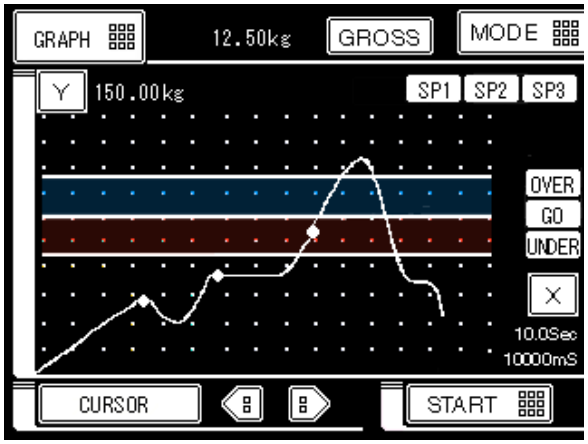
[Comparison screen]



[Message screen]



[Graphic screen]



● Weighing value display

・Weighing value, Gross/ Net selectable, Minus sign, Center zero, Overload and Errors.

● Status display

・OVER/ GO/ UNDER .. After each weighing circle, when the result is within the set tolerance range of Final, GO highlights for orange; or OVER highlights for blue or UNDER highlights for red.

・COMPL ..... During Complete signal is ON, COMPL highlights for sky blue.

・FEED/ DCHG..... Either displays FEED or DCHG in the feed weighing or discharge weighing of the Simple Comparison Control.
In Sequence Control, during Discharge gate control is ON, DCHG highlights for yellow; during the Discharge output signal is ON blinks during waiting for Discharging Command.

・HOLD ..... HOLD highlights for yellow during weight value is held.

・ZALM..... Press DZ tag, bring the Gross weight to zero, if the value is exceeded the range of set Digital Zero Regulation, ZALM highlights for red.

・LOCK ..... When LOCK on the rear panel is switched to ON (hardware lock), LOCK display in red color. When the LOCK in the setting items is set to ON (software lock), LOCK show in orange color.

・STAB ..... STAB highlights for green during weighing value is stable.
The condition of stable varies with MD setting value.

・TARE..... TARE highlights for yellow when Tare subtraction is ON.

・HI, LO..... When Weighing value exceeds Upper limit or lowers than Lower limit of setting value, HI, LO highlights for yellow.

・NZ..... NZ highlights for yellow when Weighing value ≦ Near Zero value.

・SP1, SP2, SP3..... SP1 in sky blue color when SP1 output signal turns ON.
SP2 in yellow color when SP2 output signal turns ON.
SP3 in orange color when SP3 output signal turns ON.
SP1,SP2 and SP3 blink during waiting for starting sequence control.

・RUN / ACCUM..... Total comparison is conducted. When Total limit is ON, ACCUM is displayed in red. Run is displayed in sky blue during normal operation at output of Total limit OFF.

● Accumulation display

・ALM ..... Shows Alarm numbers.
Calibration error during calibration operation.
Sequence error during sequence control.

・SEQ ..... Shows status numbers in Sequence control. For detail status information refer to Message Display please.

・CNT ..... Shows the number of times under weighing. They are counted individually by each Code.
The number of times is up to "9999", there are no more accumulation value will be recorded when it beyond the "9999".
Initializes to " 0 " be performing accumulation clear.

・ACM..... Shows the accumulated value. Accumulation is performed and recorded for the Code number currently weighing.

● Message display

There are four screens in Message display. Changing screens push Message screen selecting tag.

・Error message ..... Show the detail error message of Calibration or Overload.

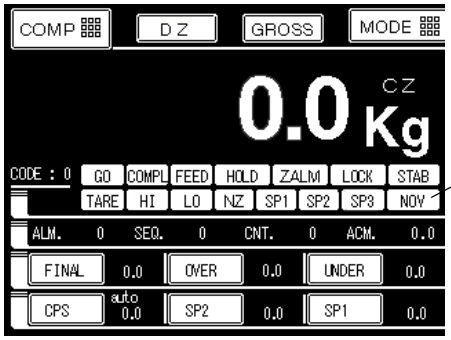
・Sequence status..... Show the present status of sequence control.
To start or stop sequence control, push START or STOP tag in Message display or trigger Start / Stop control I/O on the rear panel.

・Setting value ..... Show the Setting value of the currently weighing Code, with its accumulated value and the number of times of weight.

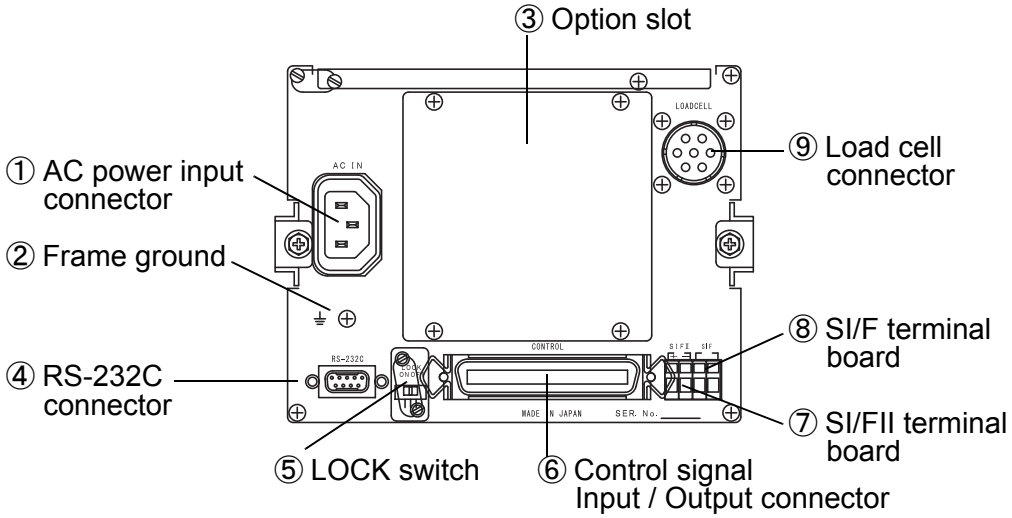
・Space..... No messages.

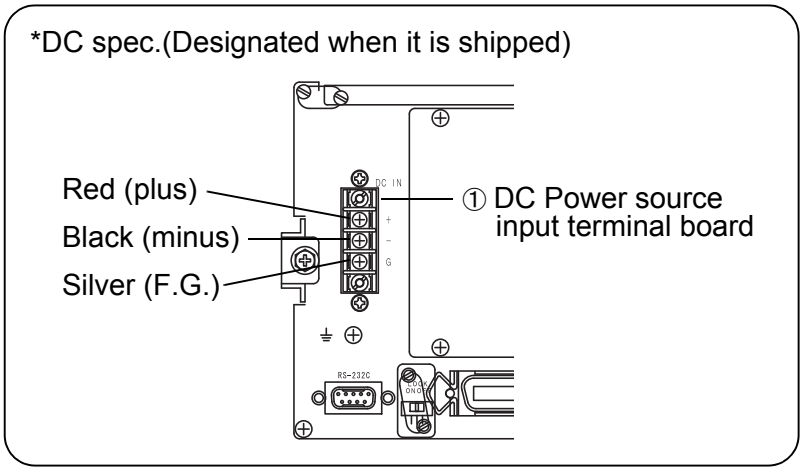
● Update setting value

During update the Setting value to the memory (NOV. RAM), instead of RUN shows NOV. Please make sure do not disconnected power when NOV is showing.



2-2. Rear Panel





① AC power source input connector/ DC power source input terminal board

AC spec.

Connect with AC power source cable supplied. AC voltage is 100V~240V(± 10%) AC frequency is 50Hz / 60Hz.

DC spec. (Designated when it is shipped.)

Connect DC power source. Voltage input is DC12~24V (± 15%).

② Frame ground (F. G.)

Earth terminal should be grounded to avoid electric shocks and static charge interference. The F.G. terminal on the rear panel must be grounded directly, not with the AC ground.

③ Option slot

Up to 4 option boards can be installed.

- BCD Parallel data output
- BCD Parallel data input
- D/A Converter

With one of the serial communication interface.

- RS-485
- CC-Link
- DeviceNet

④ RS-232 connector

The adaptable plug is OMRON XM2D-0901 (Cover: XM2S-0913 with #4-40 screw) or its equivalent.

⑤ LOCK switch

Lock switch is for disabling changes in calibration and setting values. While switch is ON could not do calibration.

⑥ Control signal Input/ Output connector

Connector for performing control signal input and output. The adaptable plug is DDK 57-30500 (attached to the F805A) or its equivalent.

⑦ SI/FII terminal board

Higher speed bi-direction 2-wire serial interface is a network solution for connecting weighing controllers, converters, printer and remote displays up to 20 devices.

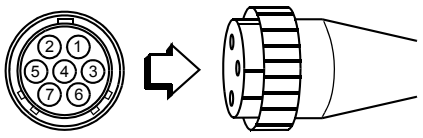
⑧ SI/F terminal board

2-wire Serial interface is to connect Unipulse peripheral equipment such as printer, remote display.

⑨ Load cell connector

7-pin round connector for 6-wire connection with load cells, adaptable plug is Hirose JR16PK-7S or its equivalent

Pin No.	Signal（6-wire）	Signal （4-wire）
1	＋EX	＋EX
2	＋S	（connect 1 to 2）
3	－S	－EX
4	－EX	（connect 3 to 4）
5	＋SIG	＋SIG
6	－SIG	－SIG
7	SHIELD	SHIELD



3. Setting Mode Chart

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OPTION

※ Refer to pages of the separate volume for CC-Link setting

RS-485

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CC-LINK

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BCD OUTPUT

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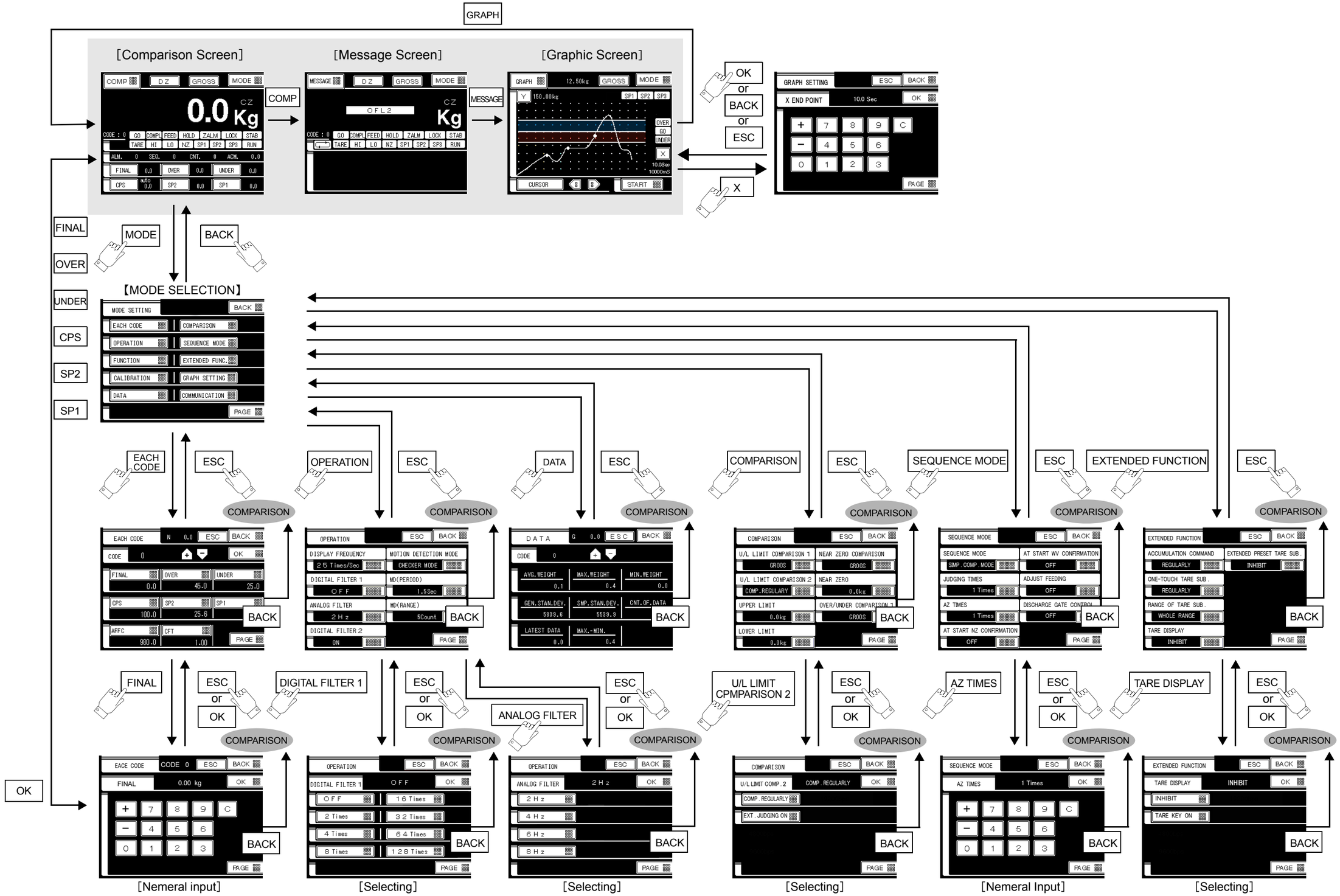
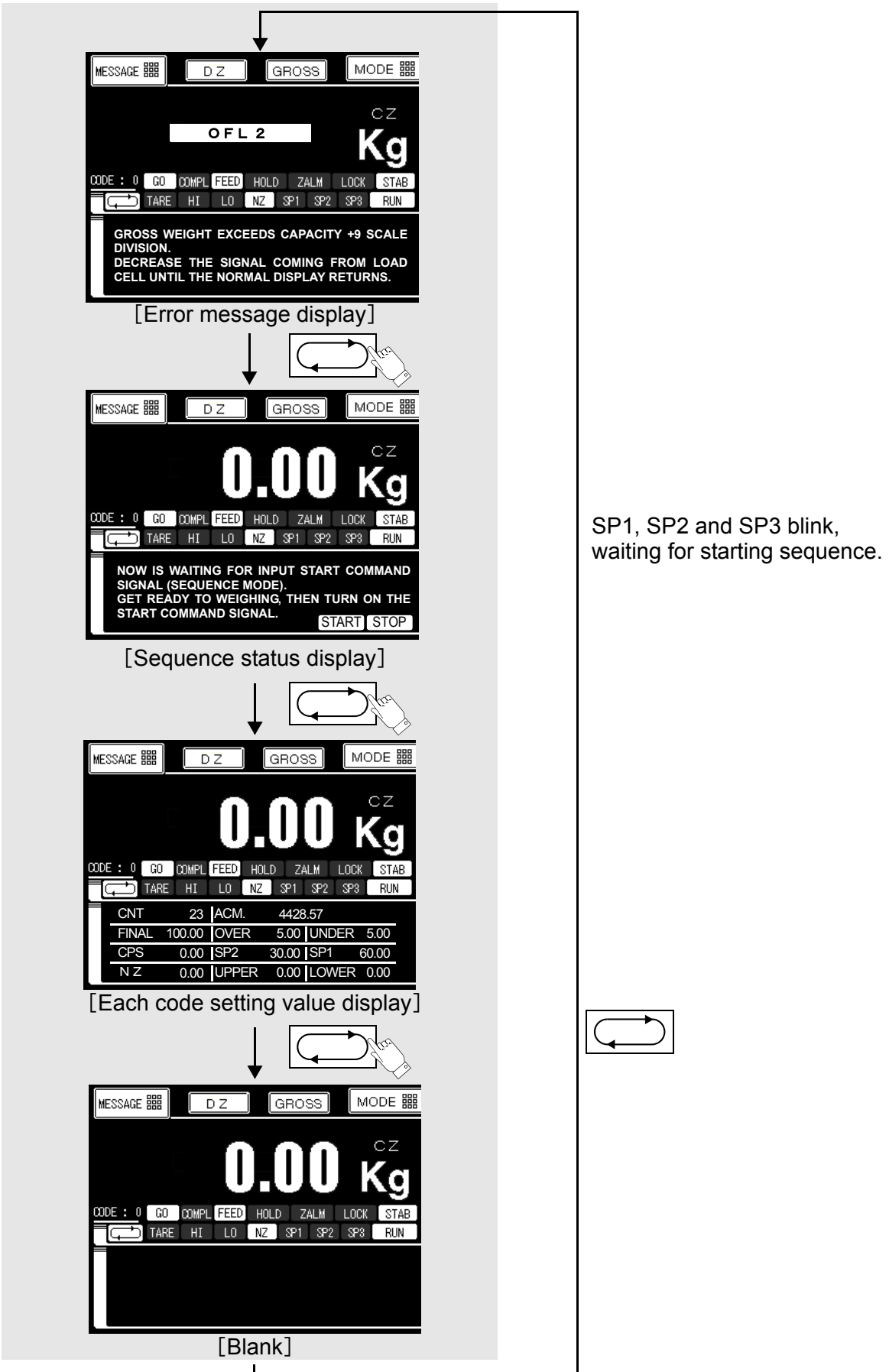
DATA UPDATE RATE	(P.104)

3-1. Screen Composition



3-2. Message Screen

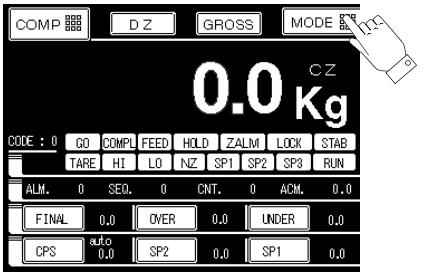


3-3. The Way of Setting

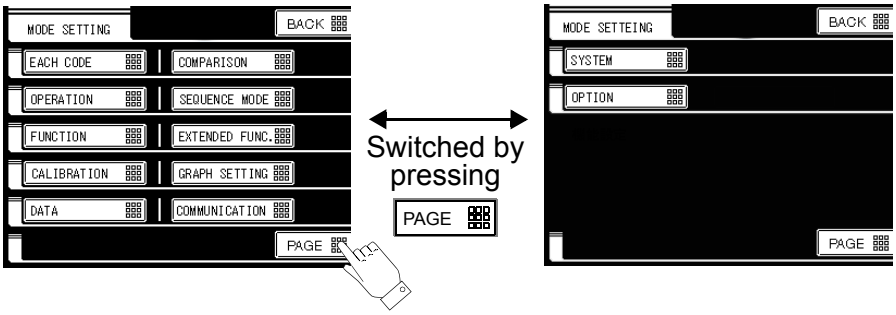
3-3-1. Selecting Analog Filter

Vibration in the process control not only causes fluctuating weight display, but also inaccurate batch weights. The motors, mixers, blenders, screw feeders and vibrators are necessary parts to any automation weighing systems but each can introduce a unique vibratory force to the scale. To adjust analog filter to suit to the weighing systems improves batch quality, speed up the processing and eliminates wasted materials.

1） Press MODE button.

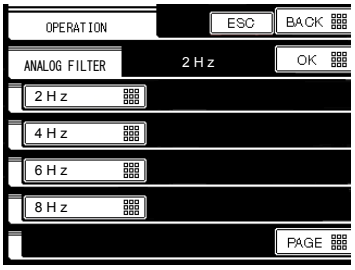


2） Select the "OPERATION" tag.



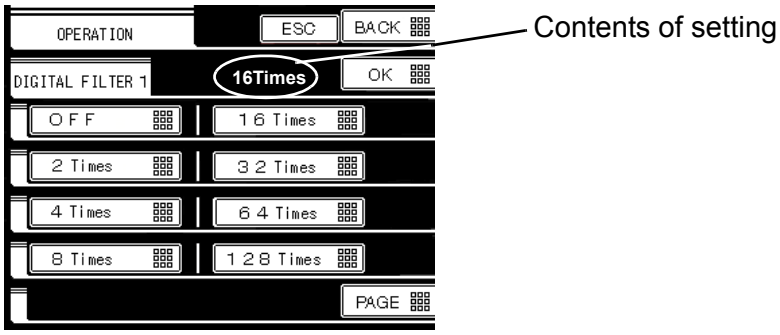
3）Select the "Analog Filter", choose the analog filter within 2 Hz, 4 Hz, 6 Hz or 8 Hz. The lower frequency is for killing strong vibration, to make the best choice to your system please.

Press OK , continues to choose other setting items in "OPERATION" category.



4） Press BACK , returning to Comparison Screen.

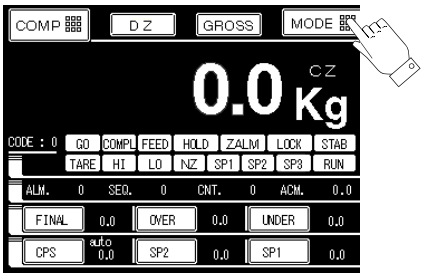
3-3-2. Selecting Digital Filter



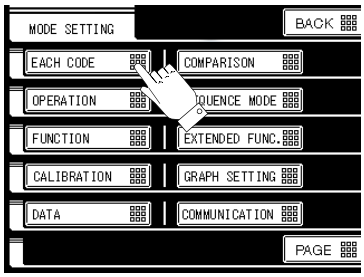
1) Press MODE button.
2) Select the "OPERATION" tag.
3) Select the "Digital Filter 1" button and enter in your desired times. Press OK and you will be back in the operation menu.
   The higher times Digital Filter caures lower response.
4) Press BACK button returning to Comparison Screen.

3-3-3. Setting Each Code

1) Press MODE button.



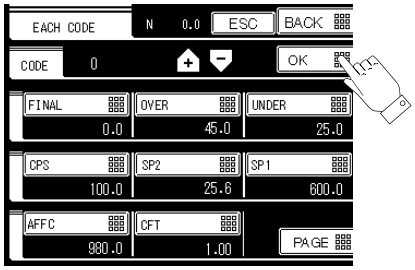
2) Select the "EACH CODE" tag.



3) It shifts to Each Code setting display. Select a code if necessary.

   Select a code by pressing + − key.

   Press OK for registration.



Notice

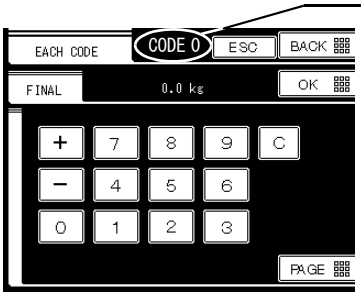
During Code selection, Code figure turns to red.

When registration is finished by pressing [OK], Code figure turns to green.

Setting Items on the screen [from FINAL to ACCUM. CLEAR (Accumulation value)] are concerned with the Code figure that highlights in green.

4) Shifts to the Final setting screen by pushing "Final" tag.

Input Final value by ten keys, press [OK] for registration.



The registered Final value is belong to the code number which shows on the top of screen

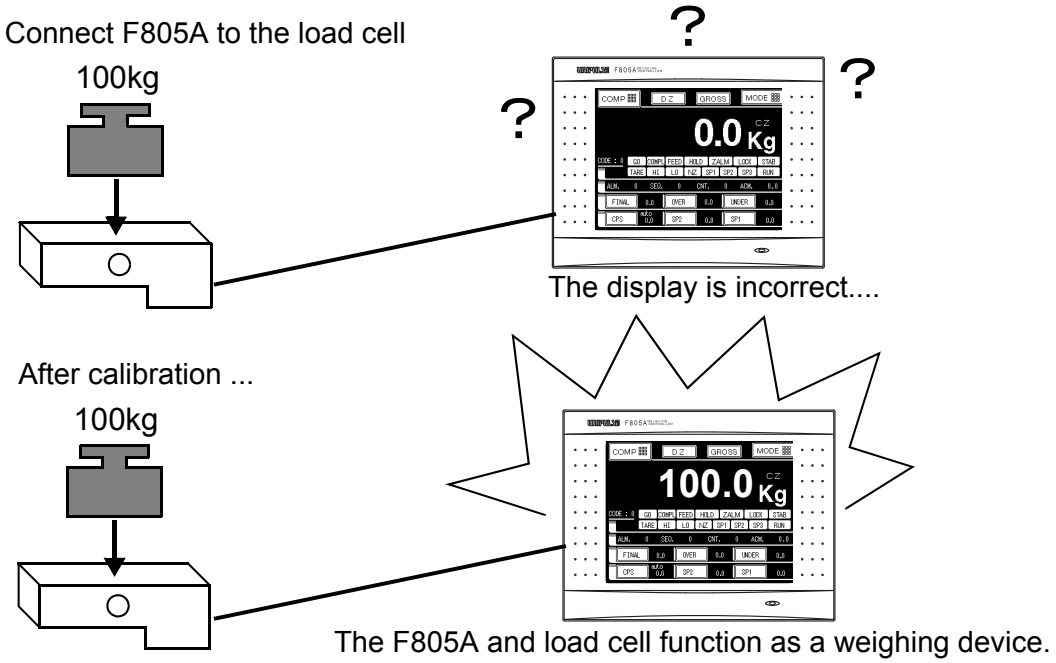
Notice

Select a Code number by pressing [+] [−] key, as described in 3) called " Key input " method; then select a Code number via Control I / O on the rear panel called " External input ". In detail please refer to P.36 .

4. Calibration

4-1. What is Span Calibration

Span Calibration means putting a load (test weight) on the load cell (or scale) and calibrating so the F805A indicates the correct weight.

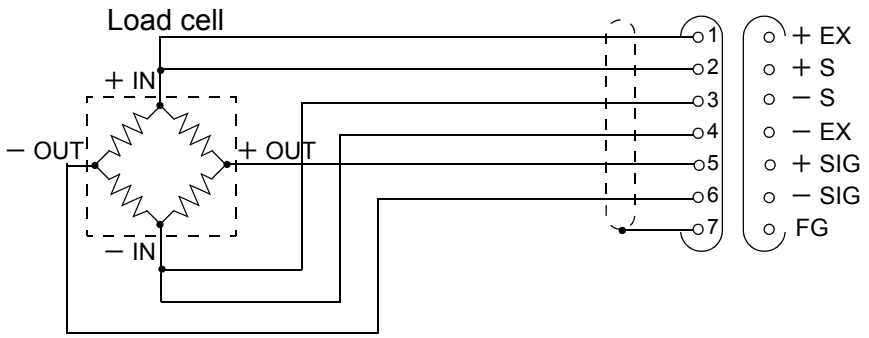


4-2. Load Cell Connection

The excitation voltage of the F805A is 10V DC/5V DC selectable at 120 mA. Up to 4 load cells (350 ohm) may be connected in parallel (when excitation is 10V). A 7-pin (Hirose JR 16PK-7S) round connector is supplied.

(1) 6-Wire connection

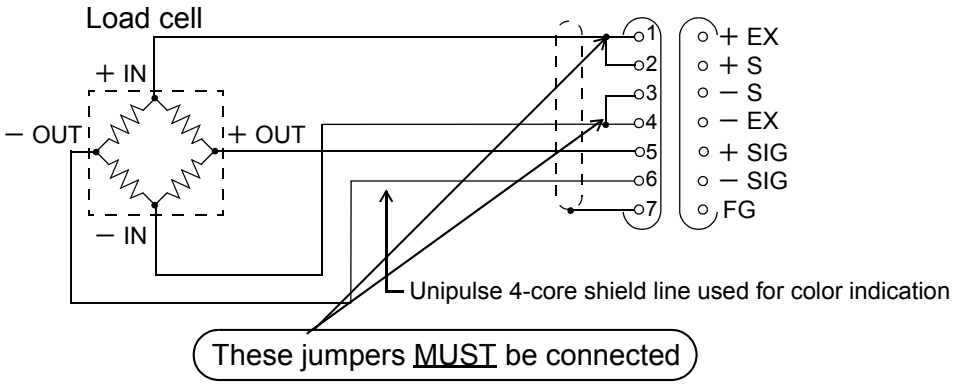
The load cell input of the F805A is a 6-wire (remote sense) connection. 6-wire shielded load cell cable should be used and kept separate from AC or other noise generating wire.



Remote sense lines are used to detect and correct variations in excitation voltage over long cable runs.

(2) 4-Wire connection

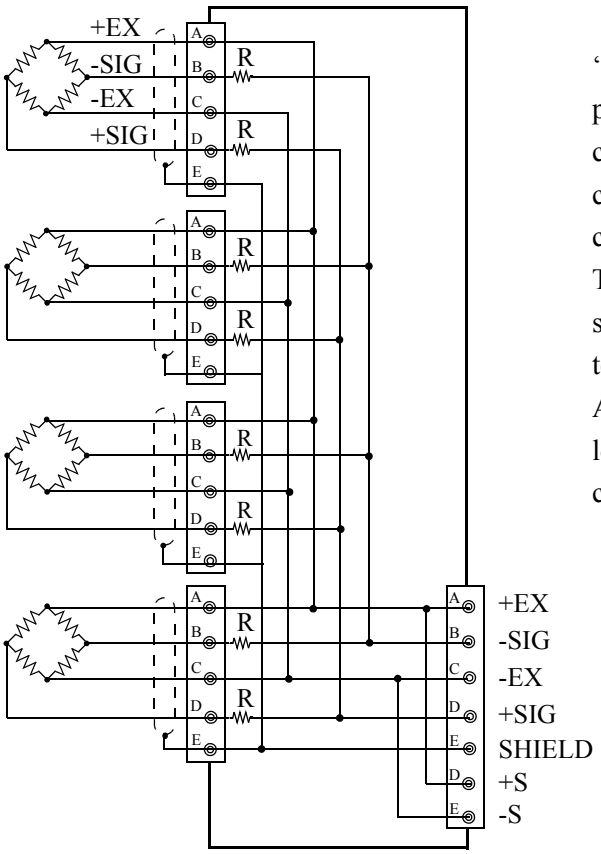
Jumper the sense lines to the Excitation lines (pin 1 to 2, pin 3 to 4) in a 4-wire system (shown below). Failure to comply may result in system damage.



(3) Connecting load cells in parallel

Some industrial applications require several load cells connected in parallel (e.g., tank or flow scales).

A summing junction box should be used to facilitate connection and corner correction.



'n' (number) load cells connected in parallel are considered one unit whose capacity is 'n' x rated capacity of load cells (load cells must have the same capacity, bridge resistance, and mV/V).

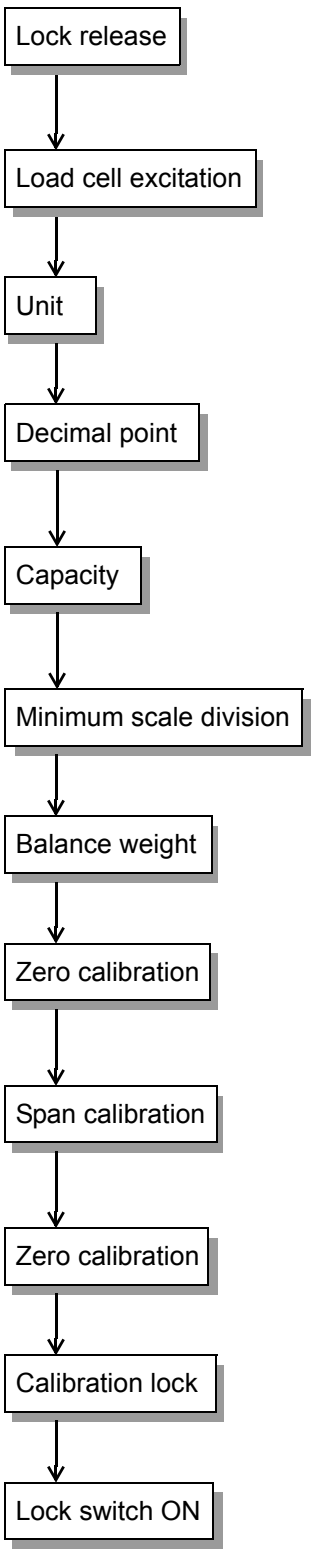
The averaging resistor (R) must be in same relative ratios with a low temperature coefficient.

Averaging resistors are not needed if load cells were designed for parallel connection.

Notice

When connecting several load cells in parallel, load cell capacity should be higher than expected load to compensate for mechanical shock or eccentric loading.

4-3. Calibration Procedure



Release calibration inhibition lock by switching OFF the Lock Switch on the rear panel. (Hardware Lock)
Release Setting Value Lock which inhibits the calibration. (Software Lock)

Select Load cell Excitation between 10V to 5V.

Register the Unit of the scale.

Register the position of Decimal point.

Register the maximum capacity of the scale.
If the registered value is exceeded by 9 scale divisions, display shows over scale "OFL2".

Register the minimum scale division of the scale.

Register the value of load (balance weight) for calibration.

Calibrate the initial zero point.

Place the load (balance weight) on the load cell and calibrate the span value.

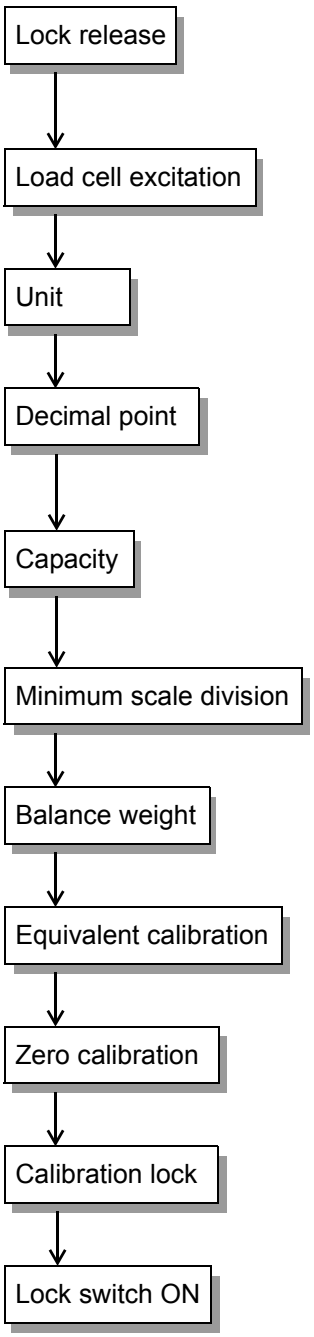
If it is necessary, re-calibrate initial zero point.

Disable changing setting value related to calibration.

Turn on Lock Switch, disable calibration.

4-4. Secondary Calibration Procedure (Equivalent Calibration)

Equivalent calibration by entering the Output (in mV/V) of the load cell to calibrate the instrument.
The equivalent calibration function is not available for NTEP. Due to the replacement of weighing controller provides against an emergency or miss-operation Span calibration, and no chance to do actual load calibration, but have to continually operate the weighing system. It is a convenient, temporary measure.



Release calibration inhibition lock by switching OFF the Lock Switch on the rear panel. (Hardware Lock)
Release Setting Value Lock which inhibits the calibration. (Software Lock)

Select Load cell Excitation between 10V and 5V.

Register the Unit of the scale.

Register the position of Decimal Point.

Register the maximum capacity of the scale.
If the registered value is exceeded by 9 scale divisions, display shows over scale "OFL2".

Register the minimum scale division of the scale.

Enter the Balance value equivalent to the mV/V for calibration.

Enter in the output of load cell in mV/V.

If it is necessary, re-enter initial zero point.

Disable changing setting value related to calibration.

Turn on Lock Switch, disable calibration.

Notice

The set Balance weight must be equal or less than the set Capacity.
When use the rated load cell mV/V for equivalent calibration, the Capacity must be equal to load cell capacity.

When connecting several load cells in parallel, it is possible to occur some differences between input and output value due to voltage drop caused by connection or material of lines.
In this case, register actual mV/V value to perform accurate calibration.

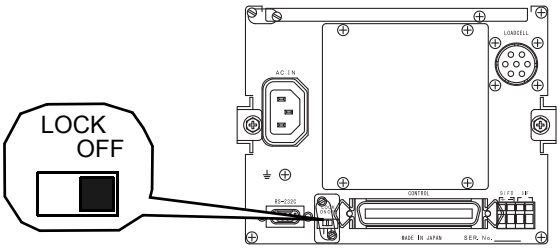
4-5. Do Calibration

Lock release

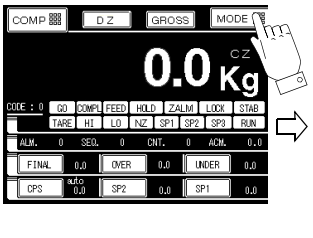
The F805A features a Lock function for disabling changes in calibration and setting values.

The Software Lock is in the configuration of SYSTEM and perform on the Comparison Screen, the Hardware Lock switch is located on rear panel. Release both of Locks before starting calibration.

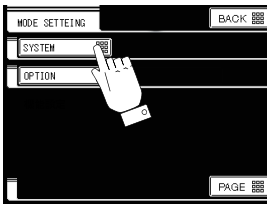
1) Set lock switch to OFF.



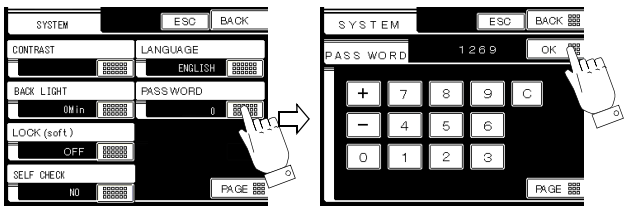
2) Press the MODE button, then PAGE .



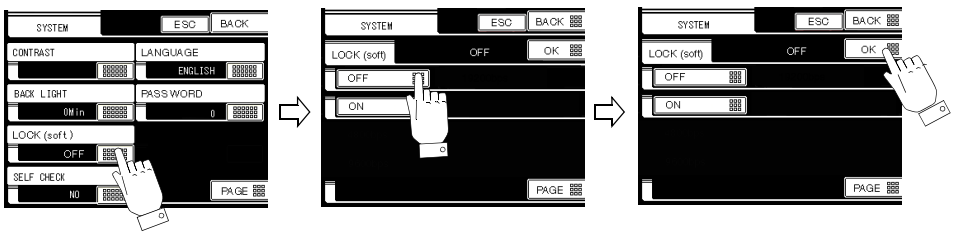
3) Select the "SYSTEM" tag.



4) Press the "PASS WORD" tag, input "1269 " then press OK .



5) Press the tag of "LOCK (soft)", then "OFF" press OK .



6) Press BACK , go back to comparison screen.

Load cell excitation

Select load cell excitation between 10V and 5V.
Refer to the specification of load cell to select suitable excitation please.

1) Press MODE button.
2) Select the "CALIBRATION" tag.
3) Press PAGE button.
4) Select the "LOADCELL EXCITATION" tag, press 10V or 5V tag then OK .

Unit

The unit can select from t, kg, g, N, lb or None unit.

Press MODE → CALIBRATION → PAGE → UNIT DISPLAY → Select Unit → OK

Decimal place

Decimal place should be selected from 0/ 0.0/ 0.00/ 0.000.

Press MODE → CALIBRATION → PAGE → DECIMAL PLACE → Select D.Place 0/ 0.0 / 0.00 / 0.000 → OK

Capacity

Register the capacity of the scale. The capacity must be within the rated load of load cells combined. The input range of capacity is between 0 to 99999.

Press MODE → CALIBRATION → CAPACITY → Input Capacity 0~99999 → OK

Minimum scale division

The minimum scale division can be from 001 to 100. The display resolution obtains from dividing minimum scale division by capacity.

Press MODE → CALIBRATION → MIN.SCALE DIVISION → Input Min.Scale Div 1~100 → OK

The display resolution ignores the decimal place.
For example : When minimum scale division is 001 then
if capacity is 10.000, the display resolution is 1/10000;
if capacity is 100.00, the display resolution is 1/10000;
if capacity is 40.000, the display resolution is 1/40000.

Balance weight

The load value (Balance weight) that is applied to the scale for calibration. The input range of Balance is between 0 to 99999.

Press MODE → CALIBRATION → BALANCE WEIGHT VALUE → Input Balance. Weight 0~99999 → OK

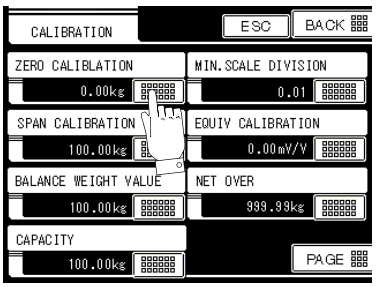
Zero calibration

Register the initial zero point.

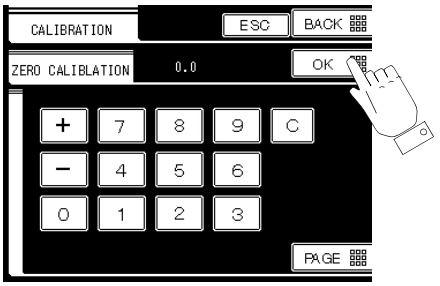
Verify there are no excess loads applied to load cell or scale.

Check STAB in green appears on the comparison screen.

1) Press the MODE button.
2) Select the "CALIBRATION" tag.
3) Press "ZERO CALIBRATION" tag.



4) Register zero point by pressing OK .



5) Zero calibration is completed when the CALZ changes to RUN and numeral display become to " 0 " on the comparison screen.

If a calibration error is displayed, redo zero calibration following the description on the message screen.

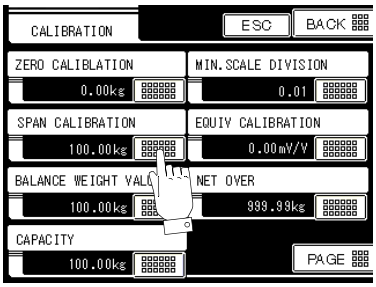
・CAL. ERR. 2 : The initial dead load is above zero adjustment range.
・CAL. ERR. 3 : The initial dead load is negative.

Span calibration

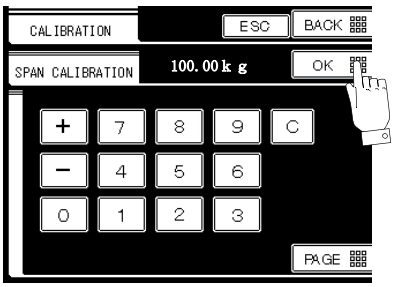
Apply the load (Balance weight) to the load cell or scale.

- The balance weight should be full capacity to get the best linearity. The balance weight must be at least 50% of scale capacity.
- Verify there is no excess load (except Balance weight) applied to the load cell or scale.
- Check STAB in green appears on the comparison screen. Correct calibration cannot be completed if the signal is unstable.

1) Press the MODE button.
2) Select the "CALIBRATION" tag.
3) Press "SPAN CALIBRATION" tag.



4) When used balance weight is equal to the capacity press OK ,if not input the real weight then press OK .



5) Span calibration is completed while the CALS changes to RUN and display the real weight on the comparison screen.

If a calibration error is displayed, redo span calibration following the description on the message screen.

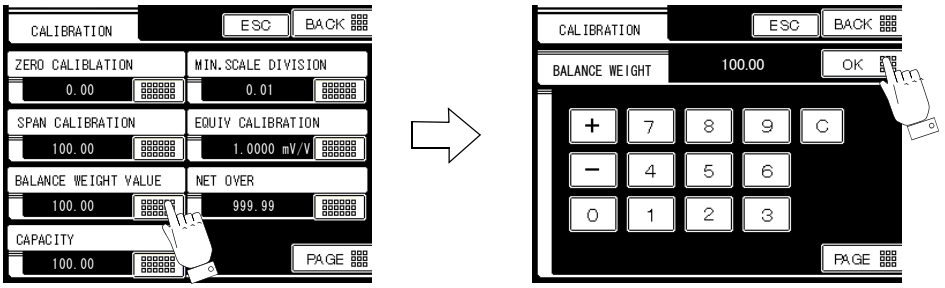
- CAL. ERR. 4 : The entered balance weight value is beyond the Capacity.
- CAL. ERR. 5 : The entered balance weight value is 00000 Re-enter the correct value.
- CAL. ERR. 6 : The load cell output does not reach the span adjustment range.
- CAL. ERR. 7 : The load cell output is negative.
- CAL. ERR. 8 : The load cell output is beyond the span adjustment range.

Regarding to error massage, refer to "Error & Trouble Shooting" on page 113 .

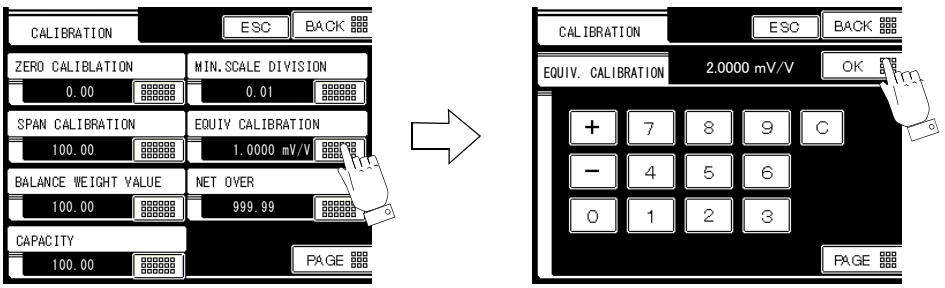
4-6. Do Secondary Calibration (Equivalent Calibration)

Input the mV/V of load cell corresponds to the input Balance weight to instrument, instrument will calibrate it following the inputted values.

1) Press the MODE button.
2) Select the “CALIBRATION” tag.
3) Press “BALANCE WEIGHT VALUE” tag,
   key input the weight value then press OK .



4) Press “EQUIV. CALIBRATION” tag, key input the corresponded mV/V to the inputted weight value then press OK .



5) Equivalent Calibration is completed while the CALS changes to RUN and display the real weight on the comparison screen.

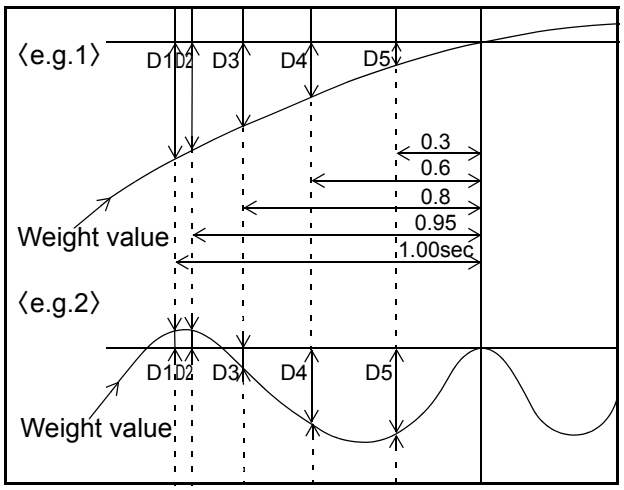
If the calibration error CAL.ERR.1 is displayed, redo Zero calibration.

5. Function Settings

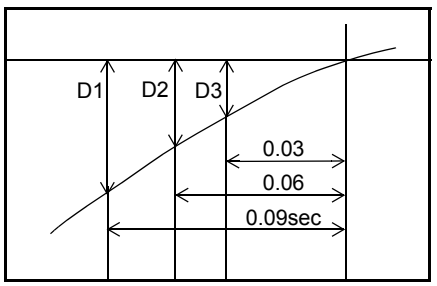
5-1. Motion Detection

When signal fluctuation is less than the result (range × Min.Scale Div.) and is within the set period, weighing value is stable and **STAB.** display lights. The two modes of Motion Detection in the F805A are : Stable Mode and Check Mode.

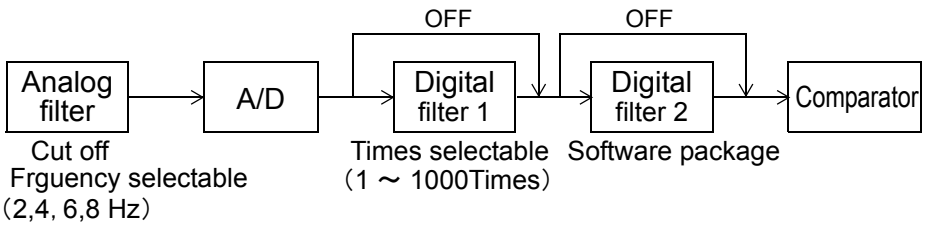
Stable Mode : Per each A/D conversion, the current weight is compared to one (1) second previous. If the any of the set parameters are exceeded, **STAB.** display goes out. (Refer to the following chart)



Check Mode : Per each A/D conversion, the current weight is compared to 0.09 second previous. If the any of the set parameters are exceeded, **STAB.** display goes out. (Refer to the following chart)



Digital filter 2, is a software package use to quickly eliminate the effects of plant vibration on weighing systems, while yielding a stable weight reading.



Operation

1) MODE → OPERATION → MOTION DETECTION MODE →
Select STABLE MODE/ CHECKER MODE → OK

2) MODE → OPERATION → MD(PERIOD) → Input 0.0~9.9 → OK

3) MODE → OPERATION → MD(RANGE) → Input 0~99 → OK

5-2. Display Frequency

Select the F805A Display Frequency. The numbers of updates on the display per second is selected here.
Internal A/D conversion speed and CPU processing speed are not changed.The available display frequencies are: 25, 13, 6 or 3 times per second. 25 times per second is recommended for normal operation.
If the display flickers, select a lower frequency.

Operation

MODE → OPERATION → DISPLAY FREQUENCY
→ Select 3/ 6/ 13/ 25 Times/ Sec → OK

5-3. Digital Filter

This function minimizes instability of the weight value by calculating the average frequency of the data converted from analog to digital. The frequency of the moving average selected from 1 to 1000 times. A higher frequency will make a more stable display with slower response.
A lower frequency will have quicker response but more unstable display.
Select the most suitable value for the weighing.

Operation

MODE → OPERATION → DIGITAL FILTER 1
→ Inputt 1~1000 → OK

5-4. Analog Filter

This function stabilizes the display by removing low frequency noise from the load cell signal as well as averaging analog signals.
Selectable frequencies are: 2, 4, 6 and 8 Hz. A higher frequency will make a more quick response but sometimes read a noise in.
Select the most suitable value for the weighing.

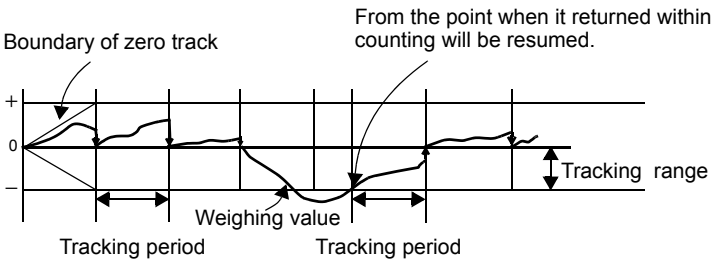
Operation

MODE → OPERATION → ANALOG FILTER
→ Select from 2/ 4/ 6/ 8 Hz → OK

5-5. Zero Tracking

This function automatically adjusts slow drifts and slight shifting of the zero point due to small amounts of accumulation on a scale.

- Zero tracking is the function to reset gross weight to zero automatically when the state remaining the zero point drift within the zero tracking range continues more than set period.
- Zero tracking period must be set between 0.1 ~ 9.9 second and its range must be set between 1 ~ 99 using 1/4 resolution interval of weight display.
  For instance, 02 corresponds to 0.5 and 12 corresponds to 3 of weight display.
  Zero tracking range is not proportional to the Minimum scale division regardless of the setting state of Minimum scale division.
  Zero tracking does not work if you set the period to 0.0 sec. and range to 00.



Operation

ZT PERIOD:

MODE → OPERATION → PAGE → ZERO TRACKING(PERIOD) →
Input 0.1~9.9 → OK

ZT RANGE:

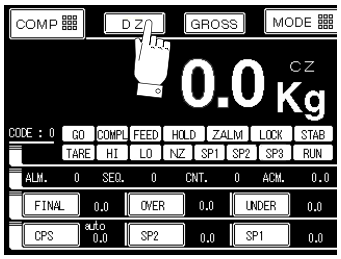
MODE → OPERATION → PAGE → ZERO TRACKING(RANGE) →
Input 1~99 → OK

5-6. Digital Zero (DZ)

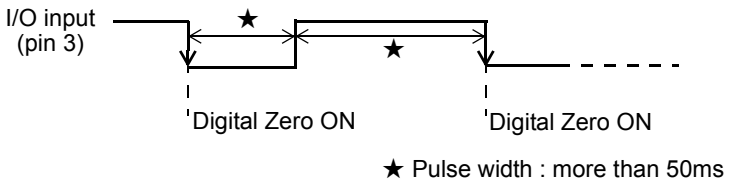
The Digital Zero function zeroes the Gross Weight to adjust for slight shifts at the zero point due to load cell drift or dregs remaining on a scale.
If Digital Zero is operated when the displayed weight is beyond the set Digital Zero Regulation Value (refer to P.31), then the Zero Alarm is actived, ZALM appears red.

Operation

Display GROSS on the to main display then press DZ .



To operate Digital Zero via the Control connector on the rear panel, input ON edge signal to the pin 3 (D/ Z ON) and the COM (Common).



5-7. Digital Zero Clear

When ZALM highlights in red, do Digital Zero Clear.
Then Digital Zero will be cleared and ZALM goes out.

Operation

MODE → PAGE → SYSTEM → PASSWORD →
Input 1269 → OK → PASSWORD → Input 1111 → OK

Input PASSWORD 1269 → 1111 in order.

5-8. Digital Zero Regulation Value

Set a range for Digital Zero adjustment (a gap from the Registered Zero Calibration) by operating Digital Zero or Zero Tracking.

Operation

MODE → OPERATION → PAGE → DZ REGULATION VALUE →
Input 0~9999 → OK

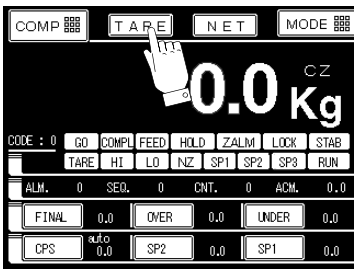
5-9. Tare Subtraction/ Reset

Tare is subtracted and the Net weight is zeroed by pressing [TARE] tag on the top. The Gross weight will not be changed by this function. The range of Tare Subtraction may be selected between the "whole range" and 0 < Tare ≦ Capacity.
Also, the Tare subtraction operation could be done during weight is stable, or in regular.
The subtracted Tare can be restored and Net weight becomes equal to the Gross weight.

Operation

MODE → EXTENDED FUNC. → RANGE OF TARE SUB. →
Select WHOLE RANGE/ 0 < TARE ≦ CAPA. → OK

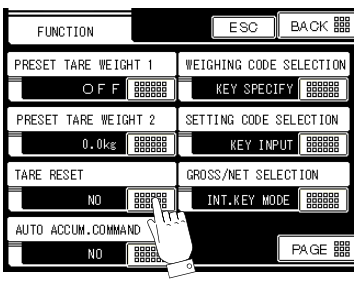
Display [NET] on the main display then press [TARE].



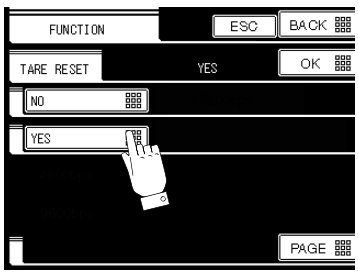
MODE → EXTENDED FUNC. → ONE TOUCH TARE SUB. →
Select REGULARY/ IN STABLE MODE → OK

MODE → FUNCTION

1) Press TARE RESET [⌨] in FUNCTION mode.



2) Press [YES] then press [OK], the Tare subtraction value is reset.



To operate Tare Subtraction, Tare Reset could also be done via the Control I/O on the rear panel by shorten input pin 4, pin 5 to COM.

5-10. Digital Preset Tare Weight

In addition to Tare Subtraction, there is Preset Tare Weight function. To subtract the set value in Preset Tare Weight 2 from Net weight, the Preset Tare Weight 1 must be set to ON. Then doing Tare Reset could not restore the value of Preset Tare Weight 2 into Net weight.

If you active Tare subtraction, while the Preset Tare weight, to reset or change the Preset Tare Weight 2 value and the status of Preset Tare Weight 1 will be decided by the setting in Extended Preset Tare Sub., Valid/ Invalid (Effect/ Inhibit). When Extended Preset Tare Sub. selected Valid (Effect) could not reset value and status.

Operation

MODE → FUNCTION → PRESET TARE WEIGHT2 → Set Tare 0~99999 → OK → PRESET TARE WEIGHT1 → ON → OK

MODE → EXTENDED FUNC. → EXTENDED PRESET TARE SUB. → Select INHIBIT/ EFFECT → OK

To view the stored Tare subtraction value by holding TARE tag on the screen, while make sure TARE KEY ON is selected in the following procedure. When Preset Tare Weight is acted, the displayed Tare weight equals Tare subtracted weight + Preset Tare weight 2.

MODE → EXTENDED FUNC. → TARE DISPLAY →
Select INHIBIT/ TARE KEY ON → OK

5-11. GROSS/NET Display

The display value is switched between Gross and Net weight by pressing GROSS NET tag on the top of each display Screen, or through control input / output connector on the rear panel.

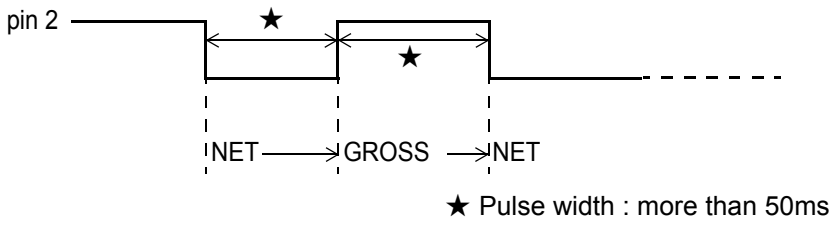
Via the Function setting item, to choice the way of switching is done by touch screen or input signal through I/O. When the later way is selected, the touch screen will be locked.

Operation

MODE → FUNCTION → GROSS/NET SELECTION →
Select INT. KEY MODE/ EXT. INPUT MODE → OK

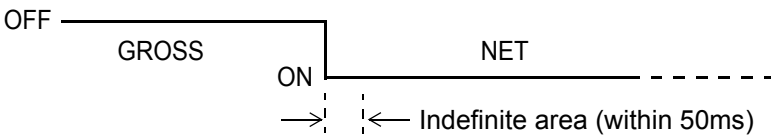
n " Internal Key Mode ", also do toggle motion via control I/O could switch between them.

NET: ON edge (OFF → ON)
GROSS : OFF edge (ON → OFF)



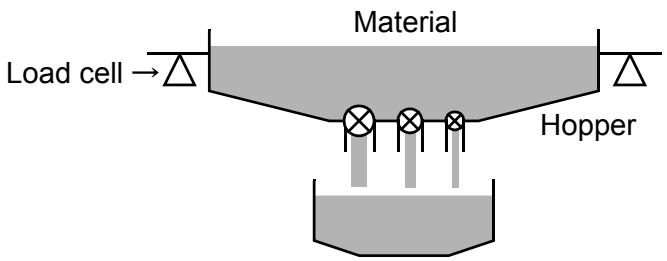
In " External input Mode ".

NET: ON level
GROSS : OFF level



5-12. Reversing Symbol at Discharge Control

When discharging a fixed quantity material from material bin, Net weight becomes negative.
Discharging weight can be revised to positive by reversing the polarity of the Net weight.
Select from Net weight with - SIGN ON or Net weight with - SIGN OFF.



Operation

MODE → FUNCTION → PAGE → DISCHARGING CONTROL SIGN →
Select - SIGN ON/ OFF → OK

5-13. TARE/DZ KEY Disablement

It can be inhibited the operation of [TARE] [DZ] for avoiding false operation on Comparison and Massage screen. Select VALID or INVALID in the Function setting item.

Operation

MODE → FUNCTION → PAGE → TARE/DZ KEY →
Select INVALID/ VALID → OK

5-14. GROSS/NET KEY Disablement

It can be inhibited the operation of [GROSS] [NET] for avoiding false operation on the each display Screen.
Select VALID or INVALID.

Operation

MODE → FUNCTION → PAGE → GROSS/NET KEY →
Select INVALID/ VALID → OK

5-15. OVER SCALE

It is a function to select the method of the display when each error of LOAD, OFL, and EXC ERR occurs.

BLINKING..... The error and the weight value are alternately displayed.
ERROR ONLY ..... Only the error is displayed.

The calibration error and the sequence error are alternately displayed regardless of this setting.

Operation

MODE → EXTENDED FUNCTION → OVER SCALE →
Select BLINKING / ERROR ONLY → OK

5-16. Code Setting and Operation

There are 100 weighing parameters could be preset into F805A. Relative to each Code number, they are Final weight, SP1, SP2, CPS, Over, Under, Auto Free Fall Compensation and Free Fall Regulation. To operate preset parameters is randomly by trigging code # designation via Control Input / Output on the rear panel.

<Setting Example>

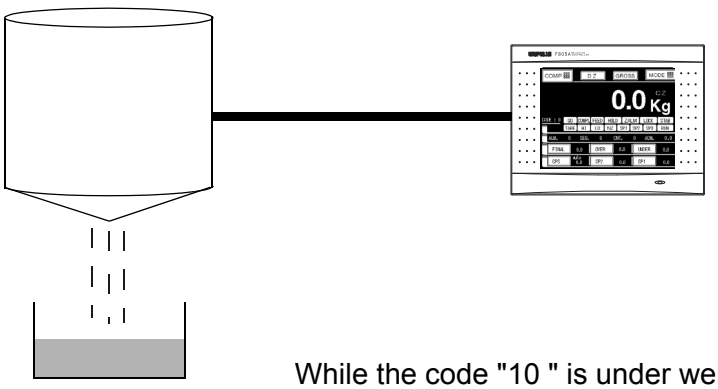
CODE No.	FINAL	SP2	SP1	CPS	OVER	UNDER	AFFC	CFT
00	100.00	20.00	10.00	1.00	0.50	0.50	1.50	1.00
01	50.00	10.00	5.00	0.50	0.50	0.50	0.75	0.75
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
99	200.00	50.00	10.00	5.00	1.00	1.00	6.00	2.00

In order to satisfy the automation control requirements, during specified code is under weighing F805A other codes setting value could be changed or reset. Also, to select weighing code or setting code number could be done by key specify, via control I/O or combinations.

Operation

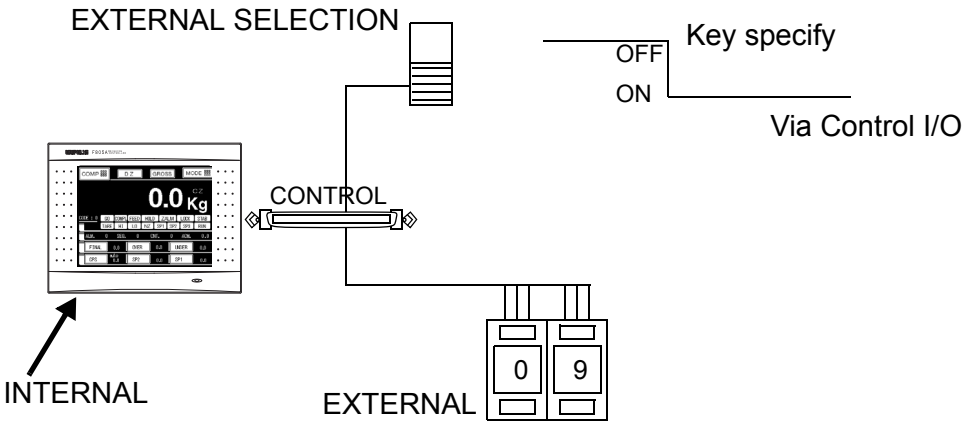
MODE → FUNCTION → WEIGHING CODE SELECTION →
Select KEY SPECIFY/ EXTERNAL INPUT/ SELECTION → OK

MODE → FUNCTION → SETTING CODE SELECTION →
Select KEY INPUT/ EXTERNAL INPUT/ SELECTION → OK



While the code "10 " is under weighing,
the setting value of code "05" can be changed.

When " Selection " is chosen here, whether it is by Key or via Control I/O to do this operation will be decided by the On/Off of pin 33 of control I/O on the rear panel.



On Comparison screen and Data display screen always correspond to the parameter of weighing code.

Notice

Do not change Weighing Code Number during Weighing process or do not switch to the unused code regularly otherwise it may sometimes not work normally. Weighing is performed by using Final discharge setting value of weighing code presently selected.

5-16-1. Each Code Key Disablement

F805A enables to disable Each Code key (Final, SP2, SP1, CPS, Over, Under, AFFC, CFT, ACCUM. CLEAR, Total COMP, Total Limit, and Count Limit) for avoiding false operation on the touch screen.

Select between Valid and Invalid.

※ When Invalid is selected, the setting value for each code cannot be written in through RS-232 interface.

Operation

MODE → FUNCTION → PAGE → EACH CODE KEY → Select INVALID/ VALID → OK

5-17. Auto Free Fall Compensation Regulation/ AFFC. ON/OFF/ Average Count of AFFC./ AFFC. Coefficient

Auto Free Fall Compensation adjusts the amount of suspended ingredient automatically to reduce weight error. Register Auto free fall compensation parameter.

Principle of auto free fall compensation

Sampling the weighing value when the complete signal turns ON after SP3 finished.
Record "n" times(A) (Average Count of AFFC) the difference(D) between set Final value and actual weight value, average the difference and multiplied by CPS coefficient, then add the result to CPS value.

Value added to CPS value

$$\frac{(D_1 + D_2 + D_3 \cdots\cdots D_A)}{A} \times C$$

F805A can regulate the value of D for minimizing the errors.

When D is within the range of (Final + AFFC. Regulation) ≧ Actual weight ≧ (Final - AFFC. Regulation), it will be treated as a effective value.

And this function will work when Free Fall compensation is selected ON.

※ All Auto Free Fall Compensation is available for each Code number respectively.

Example）

Final	20.000
Auto free fall compensation regulation	0.100
Average count of AFFC.	4
CPS coefficient	2 ／ 4

Times	Actual weighing	Error	Average count of AFFC.	CPS
0			0	← Power ON
1	20.050	+0.050	1	0.500
2	20.040	+0.040	2	0.500
3	20.070	+0.070	3	0.500
4	20.080	+0.080	4 → 0	0.500
		+0.240/4 = 0.060		
			0.060 × 2/4 = 0.030	→ CPS Value
5	20.020	+0.020	1	0.530
6	20.000	0.000	2	0.530
7	20.010	+0.010	3	0.530
8	20.110	(+0.110)	←× 3	0.530
9	20.010	+0.010	4 → 0	0.530
		+0.040/4 = 0.010		
			0.010 × 2/4 = 0.005	→ CPS Value
10	19.880	(-0.120)	←× 1	0.535
11	19.990	-0.010	1	0.535
12	20.010	+0.010	2	0.535
13	20.000	0.000	3	0.535
14	19.980	0.020	4 → 0	0.535
		-0.020/4 = -0.005		
			-0.005 × 2/4 = -0.003	→ CPS Value
				0.532

Setting CPS coefficient
CPS coefficient can be selected from 1/4, 2/4, 3/4, or 1.
You can get more accurate CPS value by selecting 1 when each time weighing value is approximate to same the value or selecting 1/4 ~2/4 when there are fluctuates in each measuring.

1) AFFC. Regulation	Set the Regulated value to each Code for avoiding CPS value becomes extremely large (or small). (input range / 0 ~ 99999)
2) AFFC. ON/OFF	Select ON or OFF, valid or invalid Auto Free Fall function. When the data is written in exclusive data area while using CC-Link (option), inhibit of CPS data written in can be selectable. (Select from OFF/ ON/ ON CC-Link OFF.)
3) Average Count of AFFC.	Recording to the set average times to update CPS value. (input range / 1 ~ 9)
4) CPS coefficient	Setting coefficient, the multiply percentage to updated value.

Operation

1) MODE → EACH CODE → Select Code No. ⌂ or ▽ → OK → AFFC → Input 0~99999 → OK

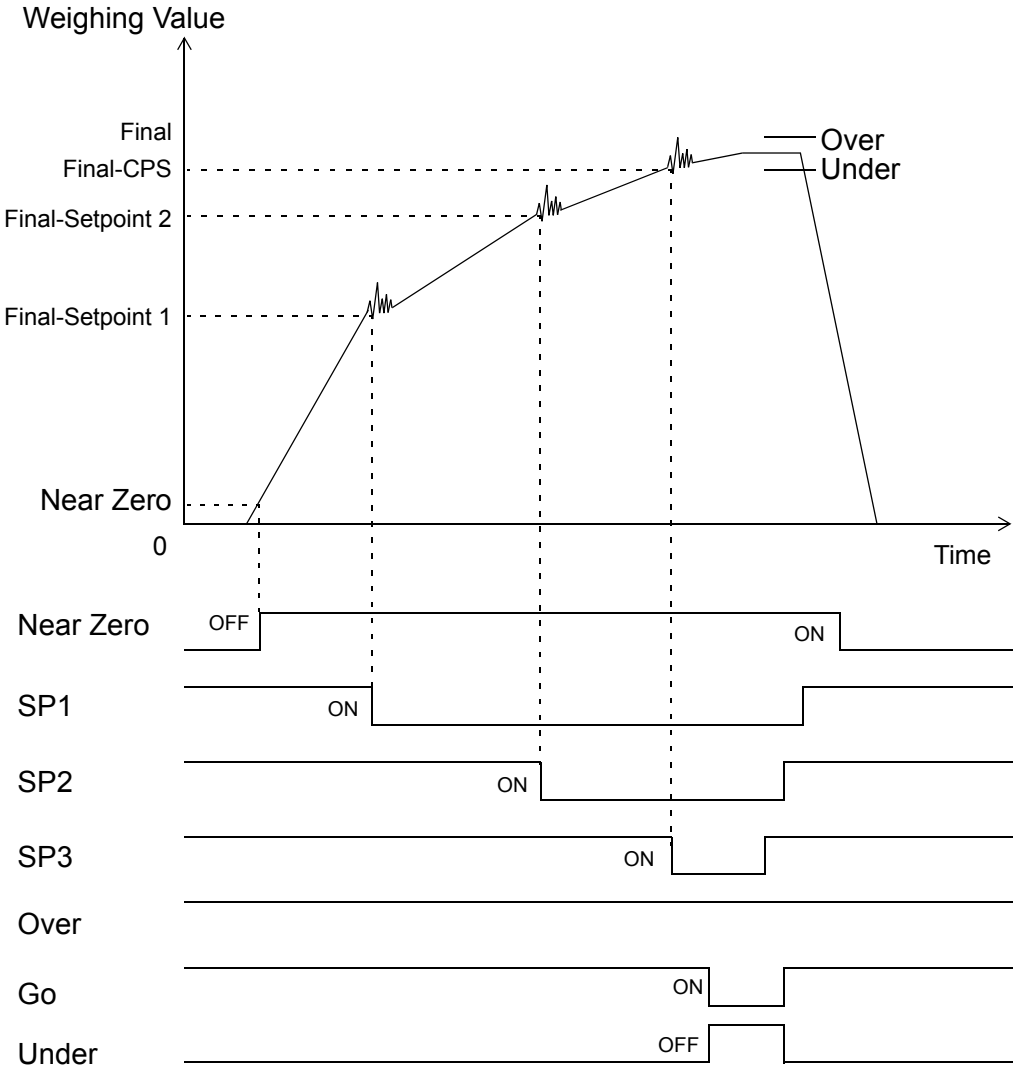
2) MODE → COMPARISON → PAGE → PAGE → AFFC → Select ON/OFF → OK

3) MODE → COMPARISON → PAGE → PAGE → AVERAGE COUNT OF AFFC → Input 1~9 → OK

4) MODE → COMPARISON → PAGE → CPS COEFFICIENT → Select from 1, 3/4, 2/4 or 1/4 → OK

5-18. Final/ SP1/ SP2/ CPS/ Over/ Under

Setup for controlling and judging the final weighing.



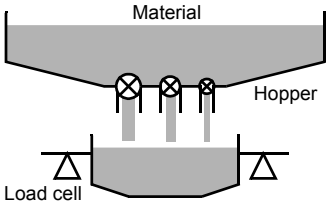
Control signal is outputted from the control connector by the setting value set here.

Conditional formulas :

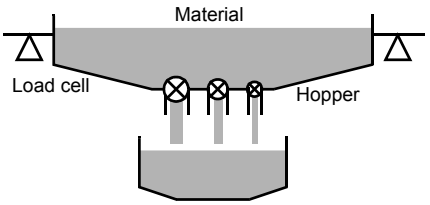
When weighing value ≦ set value of Near Zero, the Near Zero output signal turns on.
When weighing value ≧ Final − Set Point 1, the SP1 output signal turns on.
When weighing value ≧ Final − Set Point 2, the SP2 output signal turns on.
When weighing value ≧ Final − CPS, the SP3 output signal turns on.
When weighing value < Final − Under, the Under output signal turns on.
When weighing value > Final + Over, the Over output signal turns on.
When Final + Over ≧ weighing value ≧ Final − Under, the Go output signal turns on.

F805A internally enables to store 100 types (100 codes) of setting value for final weighing and control the weighing by switching each code stored.
The function provides you with a high degree formula weighing.

Feed weighing



Discharge weighing



1) Final/ SP2/ SP1 (Input range: 0~99999))
2) CPS (Input range: 0~9999)
3) Over/ Under (input range: 0~999)

When SP1 and SP2 are not used, set the same value of Final to SP1 and SP2.

Operation

1) MODE → EACH CODE → Select Code No. + or − → OK → Final, SP2 or SP1 → Input 0 ~ 99999 → OK

2) MODE → EACH CODE → Select Code No. + or − → OK → CPS → Input 0 ~ 9999 → OK

3) MODE → EACH CODE → Select Code No. + or − → OK → OVER or UNDER → Input 0 ~ 999 → OK

5-19. Others

（1）Gravitational acceleration

Slight error may occur if the scale moved from the location of calibration due to gravitational changes. If the scale is used in the location of calibration, this function is not necessary. But after calibration the scale will ship to different location, before Span calibration do operation procedure as follows.

- Select GRAV. ACCELERATION, input relative number to located Gravitational Acceleration.
- Do Span calibration.
- Input the number following new place Gravitational Acceleration.

Operation

MODE → CALIBRATION → PAGE → GRAV.ACCELERATION → Input GRAV. Acceleration 01~16 → OK

Gravitational accceleration

01	9.806	02	9.805	03	9.804	04	9.803
05	9.802	06	9.801	07	9.800	08	9.799
09	9.798	10	9.797	11	9.796	12	9.795
13	9.794	14	9.793	15	9.792	16	9.791

Amsterdam	9.813m/s^2	Havana	9.788m/s^2	Paris	9.809m/s^2
Athens	9.800m/s^2	Helsinki	9.819m/s^2	Rio de janeiro	9.788m/s^2
Auckland NZ	9.799m/s^2	Kuwait	9.793m/s^2	Rome	9.803m/s^2
Bangkok	9.783m/s^2	Lisbon	9.801m/s^2	San Francisco	9.800m/s^2
Birmingham	9.813m/s^2	London		Singapore	9.781m/s^2
Brusseles	9.811m/s^{22}	(Greenwich)	9.812m/s^2	Stockholm	9.818m/s^2
Buenos Aires	9.797m/s^2	Los Angelse	9.796m/s^2	Sydney	9.797m/s^2
Calcutta	9.788m/s^2	Madrid	9.800m/s^2	Taichung	9.789m/s^2
Capetown	9.796m/s^2	Manila	9.784m/s^2	Tainan	9.788m/s^2
Chicago	9.803m/s^2	Melbourne	9.800m/s^2	Taipei	9.790m/s^2
Copenhagen	9.815m/s^2	Mexico City	9.779m/s^2	Tokyo	9.798m/s^2
Cyprus	9.797m/s^2	Milan	9.806m/s^2	Vancouver,BC	9.809m/s^2
Djakarta	9.781m/s^2	New York	9.802m/s^2	Washinton DC	9.801m/s^2
Frankfurt	9.810m/s^2	Oslo	9.819m/s^2	Wellington NZ	9.803m/s^2
Glasgow	9.816m/s^2	Ottawa	9.806m/s^2	Zurich	9.807m/s^2

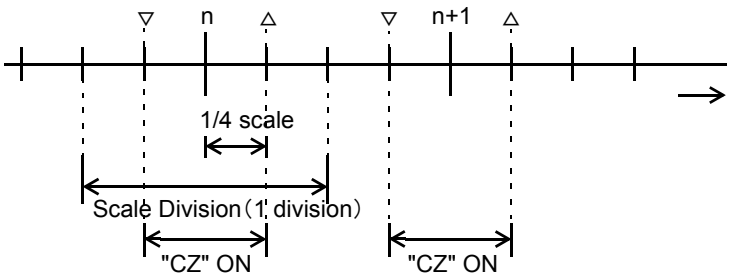
（2）1/4 Scale division

It divides the Minimum scale division into four (4) parts. The "CZ" (Center Zero) Lamp turns on when the weight is between +1/4 and -1/4 division.

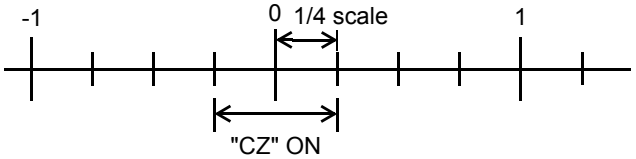
Operation

MODE → CALIBRATION → PAGE → 1/4 SCALE DIV DISPLAY → Select ON/ OFF → OK

When 1/4 Scale Division Display selects ON.



When the 1/4 Scale Division Display selects OFF, "CZ" lamp only works at the Zero Point.



6. Control I/O (External Signal)

The input/output circuits are opto-isolated from the internal circuitry.

6-1. Control Connector-Pin Assignment

DDK 57-30500 plug is included

1	⁎	COM	26	⁎	COM
2	in	G/N	27	in	Start *1
3	in	D/Z ON	28	in	Stop *2
4	in	Tare ON	29	in	Discharging Command *3
5	in	Tare OFF	30	in	Compulsory Discharging Command*4
6	in	Hold or Judge	31	in	Open Discharge Gate *5
7	in	Feed / Discharge	32	in	Close Discharge Gate *6
8	in	Accumulation Command	33	in	Code No.Designation Selection
9	in	Accumulation Clear	34	in	Graph Drawing
10	⁎	COM	35	⁎	COM
11	in	Code No. Designation 1	36	in	Code No. Designation 10
12	in	Code No. Designation 2	37	in	Code No. Designation 20
13	in	Code No. Designation 4	38	in	Code No. Designation 40
14	in	Code No. Designation 8	39	in	Code No. Designation 80
15	⁎	COM	40	⁎	COM
16	⁎	COM	41	⁎	COM
17	out	Near Zero	42	out	Discharge *7
18	out	SP1	43	out	Lower Limit
19	out	SP2	44	out	Upper Limit
20	out	SP3	45	out	Stable
21	out	Under	46	out	Weight Error
22	out	Go	47	out	Error *8
23	out	Over	48	out	Final Error
24	out	Complete	49	out	Run or Total Limit
25	⁎	COM	50	⁎	COM

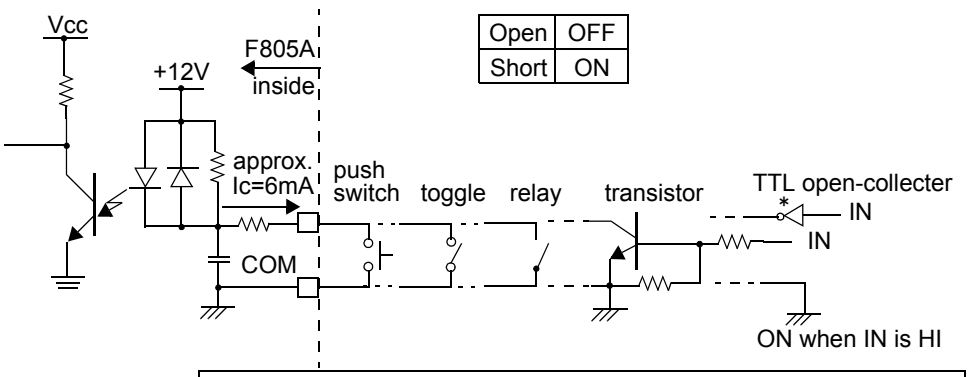
・The COM（common）terminals are connected inside.

・The power voltage is not outputted.

・*1 to *8 are effective in the Sequence Mode.

6-2. Equivalent Circuit (Input)

Signal are inputted by shorting or opening input and COM terminals. A relay, switch or transisitor may be used for this application.

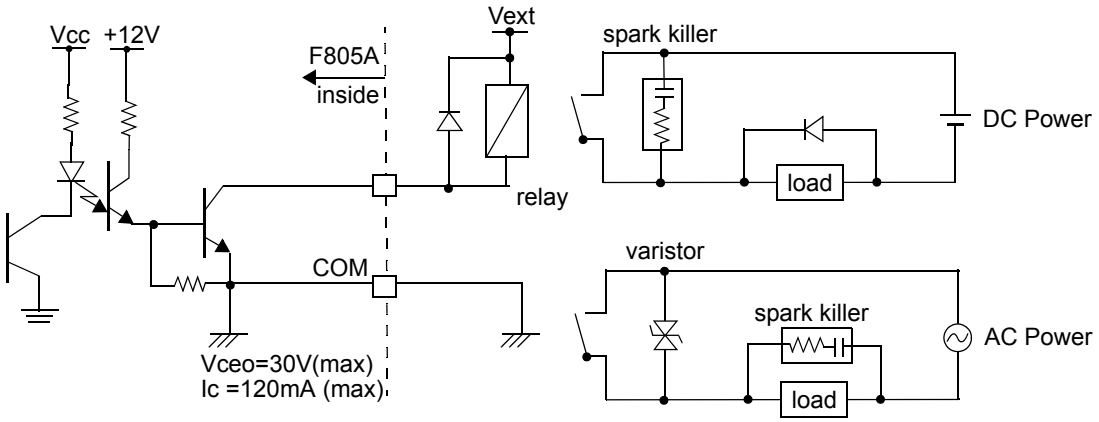


Open	OFF
Short	ON

- Do not apply external voltage to the signal input circuit.
- Use external elements which withstand Ic=10mA.
- Leakage of external elements must be within 100 μ A.

6-3. Equivalent Circuit (Output)

The signal output circuit is open-collecter output of a transistor.



output data	Tr
0	OFF
1	ON

- Use external power source（up to DC30V）for driving relay（vext）.
- Do not short-circuit the load,such as a coil of relay ,that will break the output transistor.
- Connect a surge absorber or a spark killer to the relay circuit as shown in the draft so that to reduce noise trouble and extend the life of relay.

6-4. External Input Signal

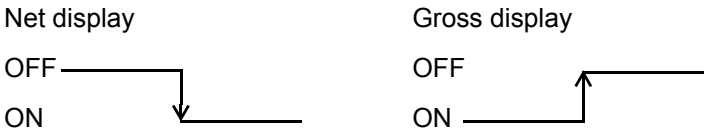
（1）Gross / Net switching (G/N) <edge input> <level input> [pin 2]

・Edge input mode (Setting G/N by tag input)

The display value is switched between Gross and Net by pressing GROSS / NET or through the External Input Signal.

When External Input pin 2 is shorted to COM (OFF → ON) the Net weight is displayed.

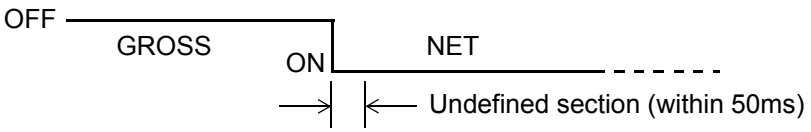
When External Input pin 2 is open to COM (ON → OFF) the Gross weight is displayed.



・Level input mode (Setting G/N by external input)

When level input is ON, Net weight is displayed.

When level input is OFF, Gross weight is displayed.



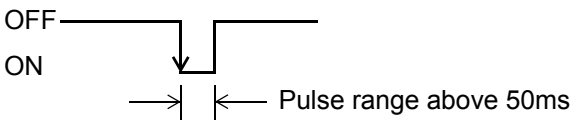
（2）Digital Zero (D/Z ON) <edge input> [pin 3]

When External Input pin 3 is shorted to COM (OFF → ON) it brings the Gross weight to Zero.

This function works within the range of Digital Zero Regulation Value.

If these values exceed the range, the ZALM (Zero Alarm) turns red.

DZ button is also effective for the same operation.

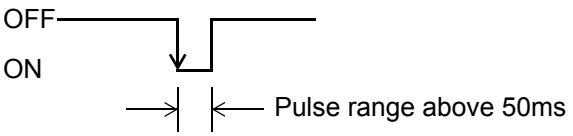


（3）Tare subtraction (TARE ON) <edge input> [pin 4]

Pressing TARE brings the Net weight to zero.

When External Input pin 4 is shorted to COM (OFF → ON) it brings the Net weight to zero. TARE key is also effective for the same operation.

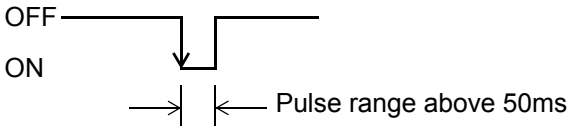
According to the setting of One-Touch Tare Subtraction if it is selected accepting Tare subtraction in weight gets stable, it will be only works when the indicated value is stable.



（４）Tare reset (TARE OFF) <edge input) [pin 5]

When External Input pin 5 is shorted to COM (OFF → ON) it brings the Net weight equal to Gross weight. This does not apply if Preset Tare Weight used.

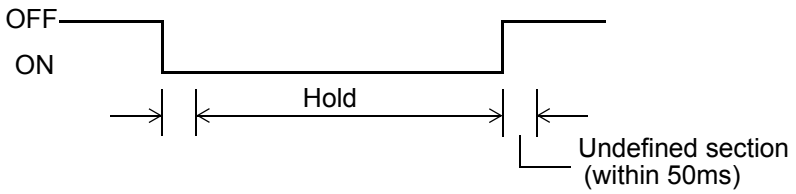
TARA RESET key is also effective in detail please refer to page 32 ～ 33.



（５）Hold <level input> [pin 6]

The Weighing value will be in a hold mode if pin 6 is shorted to COM. Setting Mode Comparison, Over/Under Comparison 2 and Upper/Lower Limit Comparison 2 must be set to Comp. regulary.

※ "HOLD" turns on in a Hold mode.

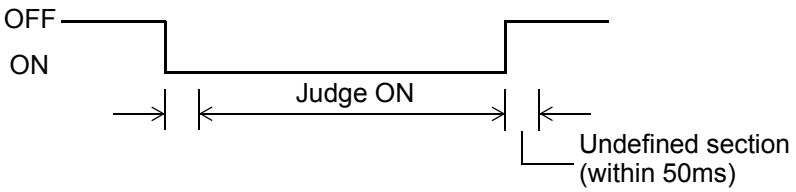


※ If Setting Mode Comparison, Over/Under Comparison 2 and Upper/Lower Limit Comparison 2 are not set to Comp.regulary, then they can only be activated by external input, that is JUDGE.

※ Hold function is ineffective in Sequence Mode.

（６）Judge <level input> [pin 6]

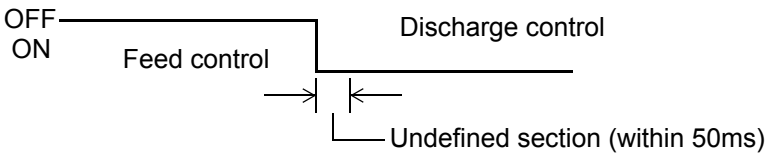
Judging Mode is activated by shorting pin 6 to COM. Setting Mode Comparison, Over/Under Comparison 2 and Upper/Lower Limit Comparison 2 must be set to EXT. Judging on.



※ Judge function is ineffective in Sequence Mode.

（７）Feed/ Discharge <level input> [pin 7]

Feed or Discharge is accessed by shorting or opening pin 7 to COM. Setting Mode Comparison, Discharge Control must be set to External.

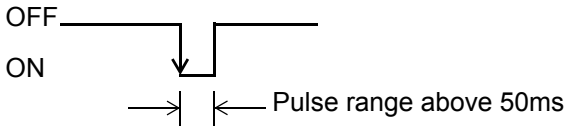


（８）Accumulation command <edge input> [pin 8]

Accumulation is activated by shorting pin 8 to COM. Setting Mode Comparison, Over/Under Comparison 1 must be set to Gross or Net.

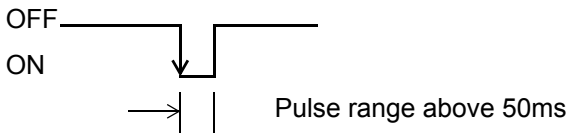
※ Accumulation is performed and recorded to the currently weighing Code.

※ A negative weighing value does not add to the Accumulation value or count.



（９）Accumulation clear <edge input> [pin 9]

Clear Accumulation value, count and all other relevant values by shorting pin 9 to COM. This only effects to the currently selected Code.



（10）Start (edge input, level input) [pin 27]

（11）Stop (edge input, level input) [pin 28]

（12）Discharge command (level input) [pin 29]

（13）Compulsory discharge command (edge input)[pin 30]

（14）Open discharge gate (level input) [pin 31]

（15）Close discharge gate (level input) [pin 32]

Effective when Discharge Gate Control is ON.

Effective in Sequence Mode.

（16）Code No. designation <level input> [pin 11 ～ 14, 36 ～ 39]

Appoint Code No.

80 40 20 10 — For 10 numerical position

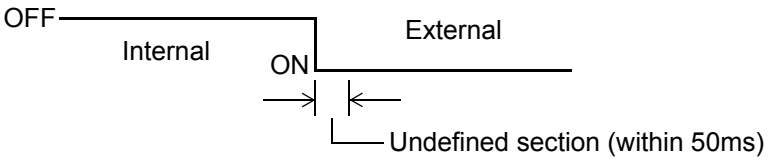
8 4 2 1 — For 1 numerical position → 00 ~ 99

※ Effective when setting the Weighing Code Selection/ Setting Code Selection by external input.

（17）Code No. designation selection <level input> [pin 33]

Code numbers are inputted through the key if pin 33 is open to COM. Code numbers are inputted through the Control I/O if pin 33 is shorted to COM.

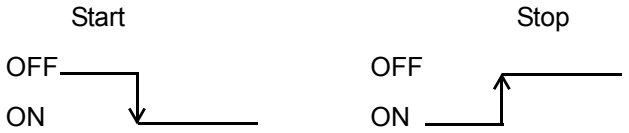
Key input when it is OFF. External input when it is ON.



（18）Graph drawing <edge input> [pin 34]

To start and stop drawing on the Graphic Screen.

When pin 34 is short to COM (OFF → ON) start drawing, while pin 34 is open to COM (ON → OFF) stop drawing.



6-5. External Output Signal

（1）Near Zero [pin 17]

When weighing value ≦ Near Zero set value, the Near Zero output turns ON.

The weighing value could be Gross, Net, Absolute Gross, Net or Comparison OFF that are selected in Near Zero Comparison of the Comparison Mode.

（2）Lower Limit, Upper Limit [pin 43, 44]

The Lower Limit output turns on when weight value < Lower Limit set value.

The Upper Limit output turns on when weight value > Upper Limit set value.

The weight value here could be Gross or Net that are selected in U/L COMP.1;

Also, could select Comparison regularly, or Comparing when external judging input is on (EXT. JUDGING ON) in the U/L COMP. 2 of the Comparison Mode.

（3）Stable [pin 45]

This output turns on when the weighing value is stable.

※ Refer to "Motion Detection" on page 28 for details.

（4）Weight error [pin 46]

This output turns on when the LOAD, -LOAD, OFL1, OFL2, OFL3 happen or Z.ALM turns ON.

（5）Run or Total Limit (pin 49)

The output turns on when F805A is ready to operate and external output is OFF in Total Comparison.

The output turns on when external output is ON in Total Comparison and Total limit output is ON.

（6）SP1, SP2, SP3 [pin 18~20]

■ In simple comparison control mode

(available for 100 Code)

SP1 turns on when weight value ≧ Final-Set Point 1

SP2 turns on when weight value ≧ Final-Set Point 2

SP3 turns on when weight value ≧ Final- CPS

■ In sequence control mode

In Sequence Control Mode, the weighing sequence is started at the ON edge of the start signal (OFF → ON), SP1, SP2 and SP3 turn ON.

SP1 turns off when weight value ≧ Final-Set Point 1

SP2 turns off when weight value ≧ Final-Set Point 2

SP3 turns off when weight value ≧ Final-CPS

The weight value here could be Gross, Net or Comparison OFF that are selected in Over/Under Comparison 1 of the Comparison Mode.

（7）Under, Go, Over [pin 21~23]

■ In simple comparison control mode

The Under signal turns on when weight value < Final-Under.

The Over signal turns on when weight value > Final+Over.

The Go signal turns on when Final+Over ≧ weight value ≧ Final-Under.

The weight value could be the Gross, Net or Comparison OFF that are selected in Over/Under Comparison 1 of the Comparison Mode.

Also, it could be selected in ‘Compare regular’, ‘Compare when the external judging input is on’, or ‘Compare when the complete output signal is on and the weight value is hold’ in the Over/Under COMP. 2 of the Comparison Mode.

■ In sequence control mode

The Under signal turns on when weight value < Final-Under.

The Over signal turns on when weight value > Final+Over.

The Go signal turns ON when Final+Over ≧ weight value ≧ Final-Under.

In Sequence Control Mode, it is ignored the selection in Over/Under COMP. 2, during complete output signal turns on while do Over/Under comparison. When Sequence with Judgment is used, during complete output signal turns on comparing while hold weight value.

（8）Complete [pin 24]

■ In simple comparison control mode

The timing of the output could be selected in Complete signal output of the Comparison Mode.

The choices are:

1. After judging time is expired, only during complete output time the complete output signal is on.
2. After judging time is expired and weight value becomes stable, only during complete output time the complete output signal is on.
3. After Go or Over/Under signal turns on and judging time is expired or weight value becomes stable, only during complete output time the complete output signal is on.

The setting item for the duration of the complete signal is the same category.

■ In sequence control mode

With judgment (The Judging Times of the Sequence Mode is not set to 0)

Refer to the explanation of Simple Comparison Control Mode.

Without judgment (The Judging Times of the Sequence Mode is 0)

It is ignored the selection in Complete signal output of the Comparison Mode.When SP3 output signal has turned off (ON → OFF), the Complete signal turns ON.

（9）Error [pin 47]

■ In sequence mode

When an error has occurred in the Sequence Mode, The Error turns on.

- When Start signal turns on, the Stop signal turns on. "SEQ. ERR. 1"
- During weigh cycle, the Stop signal turns on. "SEQ. ERR. 2"
- "ZALM"(Zero Alarm) turns on according to the set AZ times. "SEQ. ERR, 3"
- During weigh cycle, Near Zero output signal turns off "SEQ. ERR. 4"
  (Only when at start, Near Zero confirmation ON is selected in Sequence Control.)
- During weigh cycle, the weighing value ≧ SP1 "SEQ. ERR. 5"
  (Only when at start, Weighing value confirmation ON is selected in Sequence Control)
  ※ SP1=Final － Set point 1
- During weigh cycle, the Close Discharge Gate Signal turns off (stops weighing) "SEQ. ERR. 6"
- During discharge, the Stop signal turns on (stops discharge) "SEQ. ERR. 7"
- After Discharge output signal turned on, the Open Discharge Gate signal cannot turn on. "SEQ. ERR. 8"
- After Discharge output signal turned off, the Close Discharge Gate Signal cannot turn on. "SEQ. ERR. 9"

※ Concerning reset Sequence Error, refer to "Error Message" on page 113 .

（10）Discharge [pin 42]

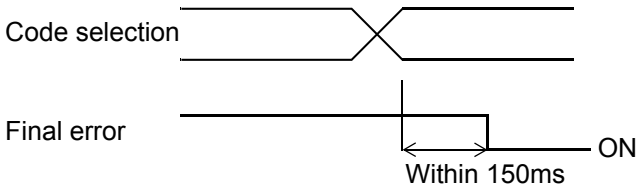
In Sequence Mode and Discharge Gate Control ON is selected, the durance of the discharging time follow the set value.

※ Concerning the Time Chart, refer to "Sequential Discharge Weighing" on page 65 .

（11）Final error [pin 48]

When (Final-CPS) < 0 Final Error output signal turns on, not only in Sequence Mode but also in Simple comparison control.

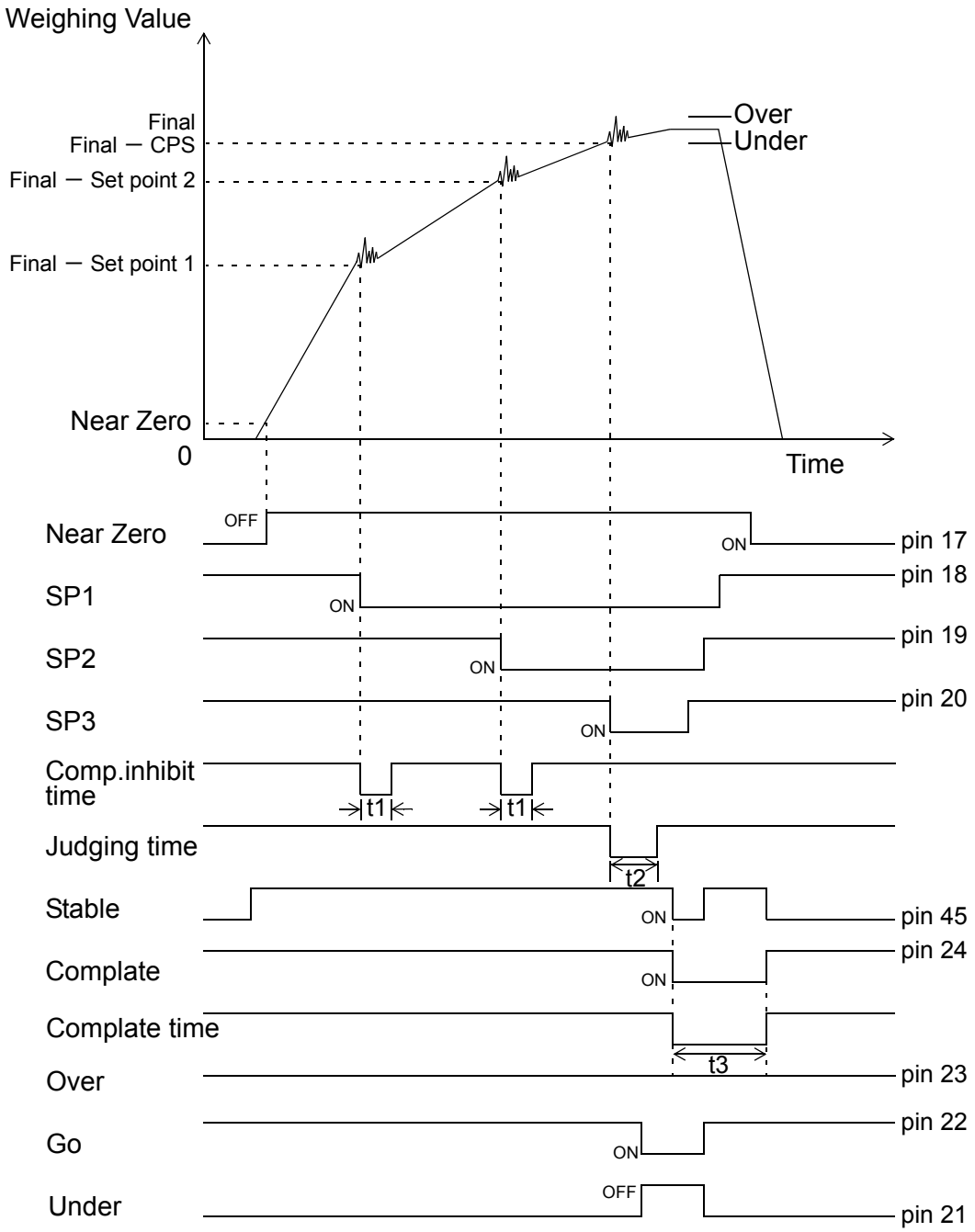
Output timing



In Sequence Mode, the Final Error output signal is on if after Start signal, the SP1, SP2, and SP3 output signal will not turn on.
Then Sequence Error 5 will be displayed.

7. Weighing Time Chart

7-1. Simple Comparison Control



t1 : Comparison inhibit time
t2 : Judging time
t3 : Complete output time

◇ The time chart on the previous page used a " Compare regularly " which is decided by selecting in " Over/Under Comparison 2 " of the Comparison mode.

◇ The period of the output " Complete " signal is decided by selecting in " Complete signal output " of the Comparison mode.

◇ Start of weighing is decided when Weight value lowers less than 25% of Final in Simple comparison mode.

◇ The duration of the signals t1, t2 and t3 are inputted in the same Comparison mode.

t1 : Comparison Inhibit Time, during this period do not comparing with the set values, it eliminates false in tuning hoper gates (or valves)

t2 : Judging Time, it works for the same purpose but during free fall period

t3 : Complete Output Time, the complete signal output duration

◇ Conditional formulas :

When weighing value ≦ set value of Near Zero, the Near Zero output signal turns on.

When weighing value ≧ Final − Set Point 1, the SP1 output signal turns on.

When weighing value ≧ Final − Set Point 2, the SP2 output signal turns on.

When weighing value ≧ Final − CPS, the SP3 output signal turns on.

When weighing value < Final − Under, the Under output signal turns on.

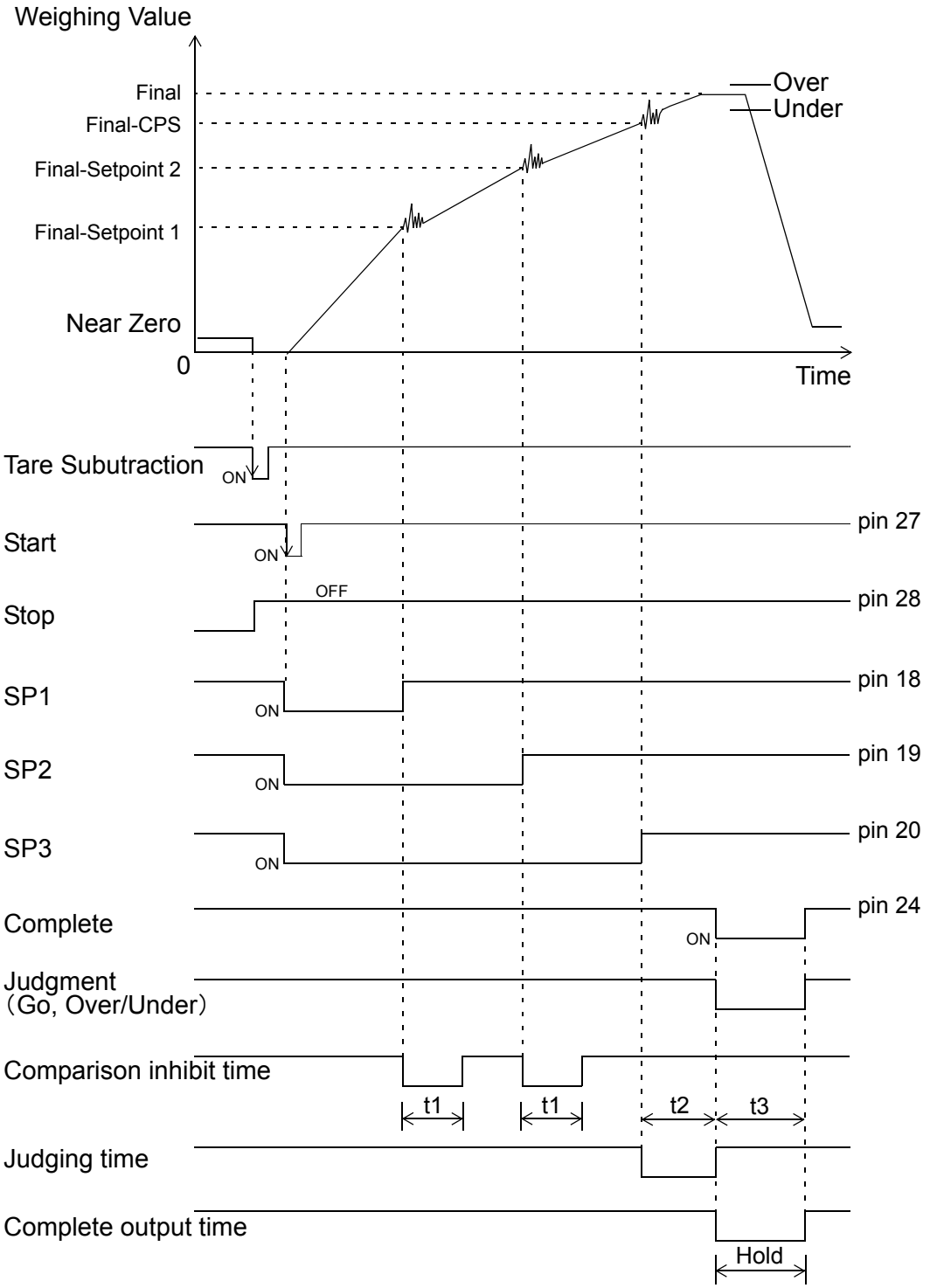
When weighing value > Final + Over, the Over output signal turns on.

When Final + Over ≧ weighing value ≧ Final − Under, the Go output signal turns on.

◇ The compared weighing value at Near Zero can be selected Gross, Net, Absolute Gross, Absolute Net or Comparison OFF in " Near Zero Comparison ";

◇ The compared weighing value with Final, SP1, SP2, FF CPS., Over/Under can be selected Gross, Net or Comparison OFF in " Over/Under Comparison 1 " of the Comparison mode.

7-2. Sequence with Judgment



t1：Comparison inhibit time
t2：Judging
t3：Complele output time

◇ Sequence mode ignores the selections in “Upper/Lower Comparison 2” and “Over/Under Comparison 2” of the Comparison mode. Over/Under compares when the “Complete” output signal gets ON and weight value is held. Upper/Lower limit compares regularly.

◇ The period of the output ‘Complete’ signal is decided by selecting in “Complete signal output” of the Comparison mode.

◇ The duration of the signals t1, t2 and t3 are inputted in the same Comparison mode.

t1: Comparison Inhibit Time, during this period do not comparing with the set values, it eliminates false in tuning hoper gates (or valves)

t2 : Judging Time, it works for the same purpose but during free fall period

t3 : Complete Output Time, the complete signal output duration

◇ Conditional formulas :

When weighing value ≦ set value of Near Zero, the Near Zero output signal turns on.

* Weighing sequence start at the ON edge of the start signal (OFF → ON), SP1, SP2 and SP3 turn ON.

When weighing value ≧ Final − Set Point 1, the SP1 output signal turns off.

When weighing value ≧ Final − Set Point 2, the SP2 output signal turns off.

When weighing value ≧ Final − CPS, the SP3 output signal turns off.

When weighing value < Final − Under, the Under output signal turns on.

When weighing value > Final + Over, the Over output signal turns on.

When Final + Over ≧ weighing value ≧ Final − Under, the Go output signal turns on.

◇ The compared weighing value at Near Zero can be selected Gross, Net, Absolute Gross, Absolute Net or Comparison OFF in “ Near Zero Comparison ”;

◇ The compared weighing value with Final, SP1, SP2, FF CPS., Over/Under can be selected Gross, Net or Comparison OFF in “ Over/Under Comparison 1 ” of the Comparison mode.

7-3. The Disablement of The START & STOP Key

To start or stop weighing sequence, except inputting signal via Control I/O, also could push START and STOP tab on the Message screen. In order to avoiding the miss touching during systems operation, they could be disabled by going through setting menu, change them to invalid.

Operation

MODE → SEQUNCE MODE → PAGE → START/STOP KEY → Select INVALID/ VALID → OK

7-4. Near Zero/ Upper Limit/ Lower Limit

Setup for judging the final weighing function.

(Conditional formula)

1) Near Zero Weighing value ≦ Near Zero setting valu ON (input range: 0~99999)
2) Upper Limit Weighing value > Upper Limit setting value ON(input range: 0~99999)
3) Lower Limit Weighing value < Lower Limit setting value ON(input range: 0~99999)

Operation

1) MODE → COMPARISON → NEAR ZERO → Input 0 ~ 99999 → OK

2) MODE → COMPARISON → UPPER LIMIT → Input 0 ~ 99999 → OK

3) MODE → COMPARISON → LOWER LIMIT → Input 0 ~ 99999 → OK

7-5. U/L Limit Comparison 1/ U/L Limit Comparison 2/ Near Zero Comparison/ Over/Under comparison 1/ Over/Under Comparison 2

It enables to select the weight (Gross/ Net) and timing to be compared at the each comparison point of U/L Limit, Near Zero or Over/Under.

1) U/L Limit Comparison 1 (Select from Gross, Net, or Comparison OFF)
2) U/L Limit Comparison 2 (Select COMP. Regularly or EXT. Judging ON)
3) Near Zero Comparison (Select from Gross, Net, Comparison OFF, Absolute Gross or Absolute Net)
4) Over/Under Comparison 1 (Select from Gross, Net or Comparison OFF)
5) Over/Under Comparison 2 (Select from COMP. Regularly, EXT. Judging ON, COMP. Signal ON or COMP. ON Hold)

*Setting of Over/Under Comparison 1 applies to Final, SP1. SP2, FF CPS., Over and Under.

Operation

1) MODE → COMPARISON → U/L LIMIT COMPARISON 1 →
Select GROSS/ NET/ COMPARISON OFF → OK

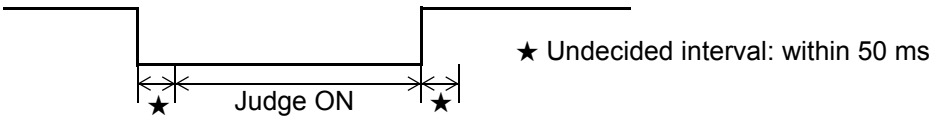
2) MODE → COMPARISON → U/L LIMIT COMPARISON 2 →
Select COMP. REGULARLY/ EXT. JUDGING ON → OK

3) MODE → COMPARISON → NEAR ZERO COMPARISON → Select
GROSS/ NET/ COMPARISON OFF/ ABSOLUTE GROSS/ ABSOLUTE NET → OK

4) MODE → COMPARISON → OVER/UNDER COMPARISON 1 →
Select GROSS/ NET/ COMPARISON OFF → OK

5) MODE → COMPARISON → PAGE → OVER/UNDER COMPARISON 2 →
Select COMP. REGULARLY/ EXT. JUDGING ON/ COMP. SIGNAL ON/ COMP. ON HOLD
→ OK

External judging signal is 6 pin of external input/output connector.

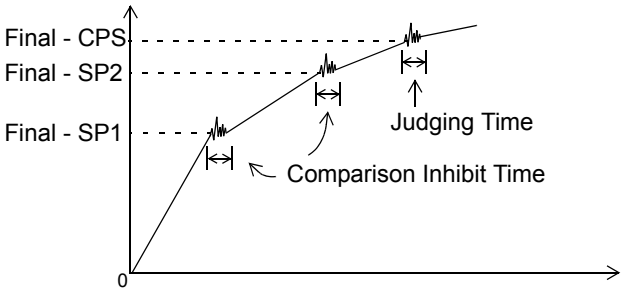


6 pin (HOLD or JUDGE) automatically becomes judge input pin when EXT. Judging ON is selected in Over/Under Comparison 2 or U/L Limit Comparison 2. However external judging input can not be performed in Sequence mode, select COMP. Regularly in Over/Under Comparison 2

7-6. Complete Signal Output/ Complete Output Time/ Judging Time/ Comparison Inhibit Time

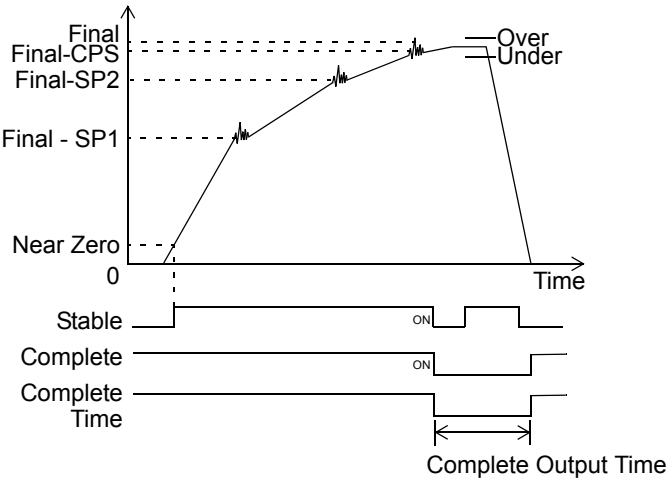
Comparison Inhibit Time/ Judging Time

The function which inhibits the comparison for certain period of time to eliminate false control or judgement with the vibration caused by opening or closing of valve.



Complete Output Time

Setting the period of complete signal (Control connector 24pin) output when the weighing is completed.



1) Complete Signal Output (Select from Judging Time/ Judge & Stable/ Judging/ Stable)
2) Complete Output Time (Input range: 0.0 ~ 9.9)
3) Judging Time (Input range: 0.0 ~ 9.9)
4) Comparison Inhibit Time (Input range: 0.00 ~9.99)

Operation

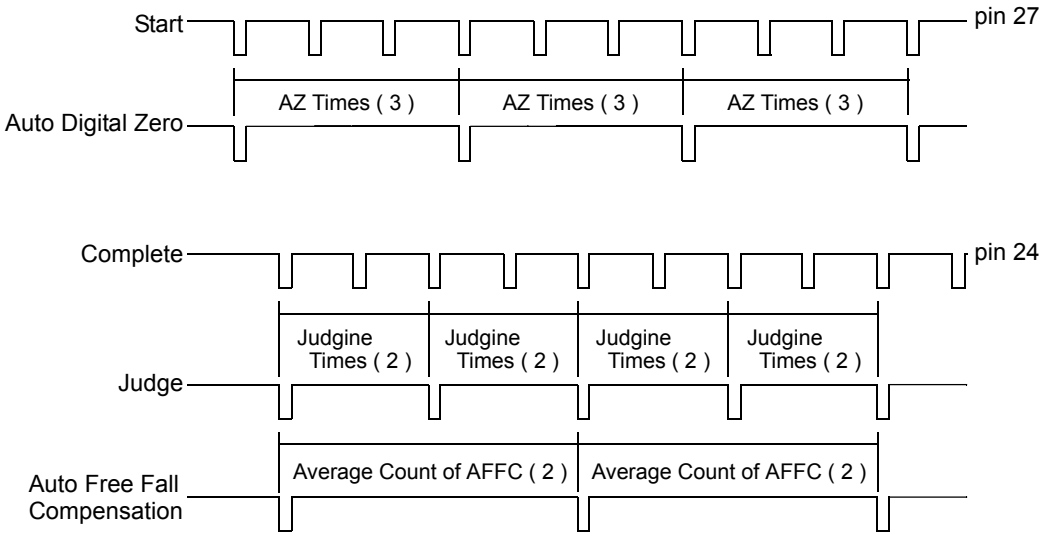
1) MODE → COMPARISON → PAGE → COMPLETE SIGNAL OUTPUT → Select JUDGING TIME/ JUDGE & STABLE/ JUDGE/STABLE → OK

2) MODE → COMPARISON → PAGE → COMPLETE OUTPUT TIME → Input 0.0 ~ 9.9 → OK

3) MODE → COMPARISON → PAGE → JUDGING TIME → Input 0.0 ~ 9.9 → OK

4) MODE → COMPARISON → PAGE → COMPARISON INHIBIT TIME → Input 0.00 ~ 9.99 → OK

7-7. Judging Times/ AZ times/ At Start NZ Confirmation/ At Start WV Confirmation/ Adjust Feeding/ Compensation Feeding Time/ Discharge Gate Control/ Discharging Time



If the set value in " Judging times " of the Sequence mode is 1, do a final, Over/Under Comparison after each weighing during the output of complete signal.

When the " Judging times " are set 2 … 99 times, do a Comparison for that number after getting complete signal.

If the " Judging times " is set to 0, Final Over/Under Comparison is inactive, refer to Sequence without judgment section please.

If the set value in " AZ times " of the Sequence mode is 1, in Gross weighing do an Auto digital Zero before each weighing start; in Net weighing do a Tare subtraction.

If the " AZ times " are set 2 … 99 times, do an Auto digital Zero for that number of starts.

If the " AZ times " are set to 0, the Auto digital Zero is inactive until key operation or external input D/Z or Tare ON signal.

Setting in Sequence Control

Set the various parameters for serial operation from weighing start to completion.

Sequence controls are classified into following categories.

1) Normal Sequence Control
   Start weighing with start signal and finish the weighing by the output of complete signal.

2) Sequence Control with Adjust Feeding
   Adjust feeding is executed for the set period in Compensation feeding time after completing the weighing.

3) Sequence control with Discharge gate control
   Discharge material by opening discharge gate for the set period in discharging time after completing the weighing. Then proceed to next weighing.

a）Judging Times

The Selection whether conduct the judgment on Over, Under or Go when complete signal is outputted after completing the weighing.
Set the number from 00 to 99.

00 ：Without Judging
01 ：Conducting Judging every time
02 ：Conducting one judging for every twice
03 ：Conducting one judging for every three times
〈
99 ：Conducting one judging in 99 times

Notice

AFFC function enable to memorizes the compensation samples by using Over/ Under Judging signal. If judging times is set 00 (without judging), F805A can not memorize the samples for AFFC.
Conseguently , AFFC function will not work.
When you use AFFC function, Judging times should be set more than 01.

b）AZ Times

The selection whether the weighing value is set 0 or not at start.
When Weighing value = Gross weight, conduct Digital 0 or when Weighing value = Net weight, subtract the Tare to set Weighing value for 0.
Set the number from 00 to 99.

00 ：Without Auto 0
01 ：Conduct one Auto Zero every time.
02 ：Conduct one Auto Zero for every twice.
03 ：Conduct one Auto Zero for every three times.
〈
99 ：Conducting one Auto Zero in 99 times

- Auto Zero is operated at the same time when Start signal is ON.
- Sequence Error 3 will be displayed when Zero Alarm is caused by Auto Zero.
- Tare Subtraction and Digital Zero can be operated via the front keys or the control connector even if AZ times is set 00 (without Auto Zero).

c）At Start Near Zero Confirmation

Setting for confirming whether Near Zero signal ON at the start of weighing.
（Select ON or OFF).
Weighing will normally start if Near Zero is ON. Sequence Error 4 is displayed if Near Zero is OFF.
Refer to "（1） Near Zero [pin 17]" on page 48 concerning Near Zero setting

d) At Start Weight Value Confirmation

Setting for confirming whether the weighing value has reached SP1 point (Final Setting Value - SP1 Setting value) at the start of weighing.
(Select ON or OFF) If has, Sequence Error 5 will be displayed.
Refer to "Final/ SP1/ SP2/ CPS/ Over/ Under" on page 40 concerning SP1 setting.

e) Adjust Feeding (Select ON or OFF)

f) Compensation Feeding Time

Operation

1) MODE → SEQUENCE MODE → JUDGING TIMES → Input 0 ~ 99 → OK

2) MODE → SEQUENCE MODE → AZ TIMES → Input 0 ~ 99 → OK

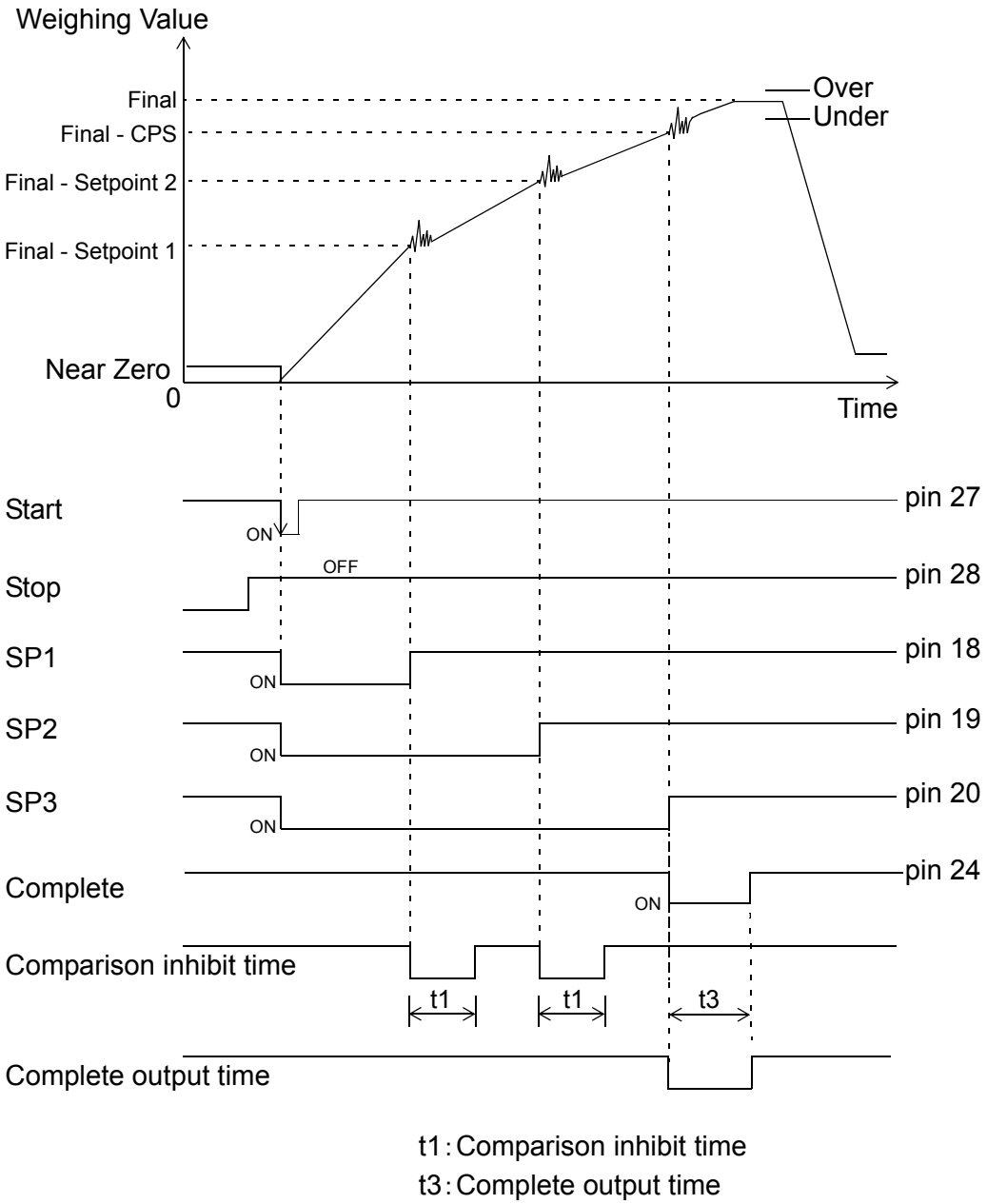
3) MODE → SEQUENCE MODE → AT START NZ CONFIRMATION → Select OFF/ ON → OK

4) MODE → SEQUENCE MODE → AT START WV CONFIRMATION → Select OFF/ ON → OK

5) MODE → SEQUENCE MODE → ADJUST FEEDING → Select OFF/ ON → OK

6) MODE → EACH CODE → Select Code No.  or  → OK → CFT → Input 0 ~ 999 → OK

7-8. Sequence without Judgement

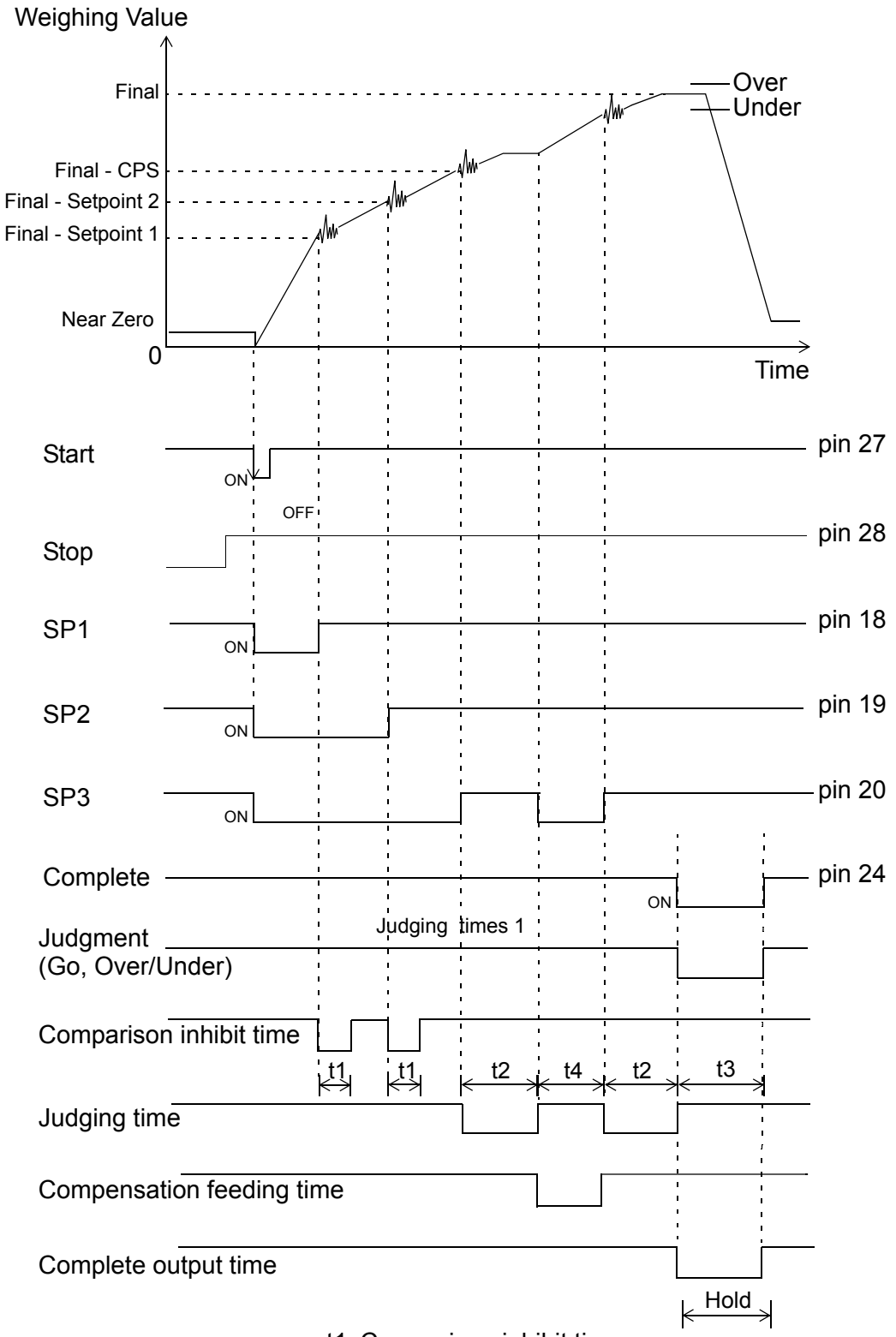


t1 : Comparison inhibit time
t3 : Complete output time

◇ The set value in "Judging times" of the Sequence mode is 0, final Over/Under Comparison is inactive. At the same time it ignores the selection in "Complete signal output" of the Comparison mode.

When the SP3 output signal at the OFF edge (ON → OFF) Complete signal turns ON.

7-9. Sequence with Adjust Feeding Effective



t1 : Comparison inhibit time
t2 : Judging time
t3 : Complete output time
t4 : Compensation feeding time

◇ The “Adjust feeding” of the Sequence mode have to be set ON.

◇ The period of the output ‘Complete’ signal is decided by selecting in “Complete signal output” of the Comparison mode.

◇ Sequence mode ignores the selections in “Upper/Lower Comparison 2” and “ Over/Under Comparison 2 ” of the Comparison mode. Over/Under compares when the “ Complete ” output signal gets ON and weight value is held. Upper/Lower limit compares regularly.

◇ The duration of the signals t1, t2, t3 and t4 are inputted in the same Comparison mode.

t1: Comparison Inhibit Time, during this period do not comparing with the set values, it eliminates false in tuning hoper gates (or valves)

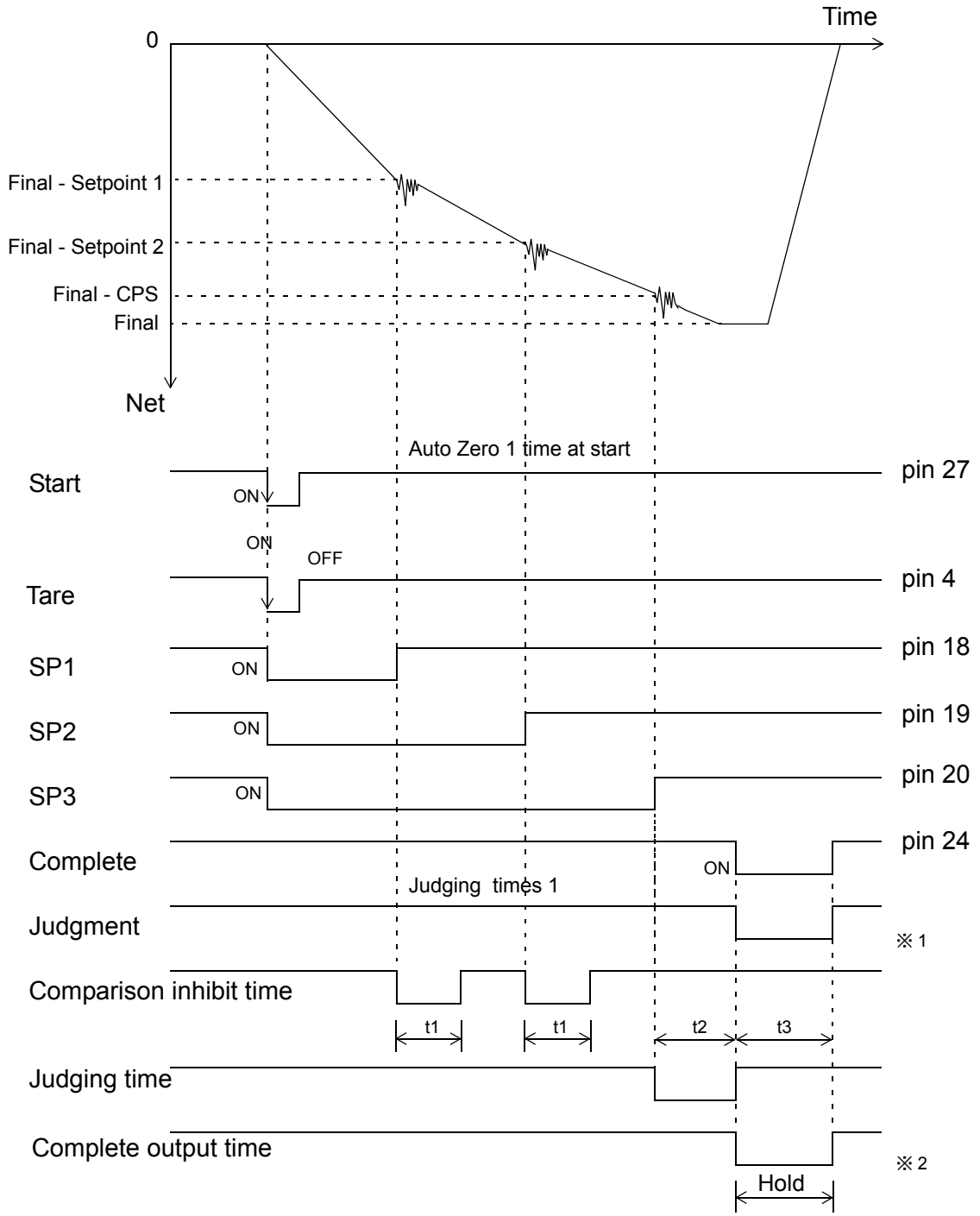
t2 : Judging Time, it works for the same purpose but during free fall period

t3 : Complete Output Time, the complete signal output duration

t4 : Compensation feeding time

The duration of the Compensation feeding time (CFT) is in the each code setting mode.

7-10. Sequential Discharge Weighing

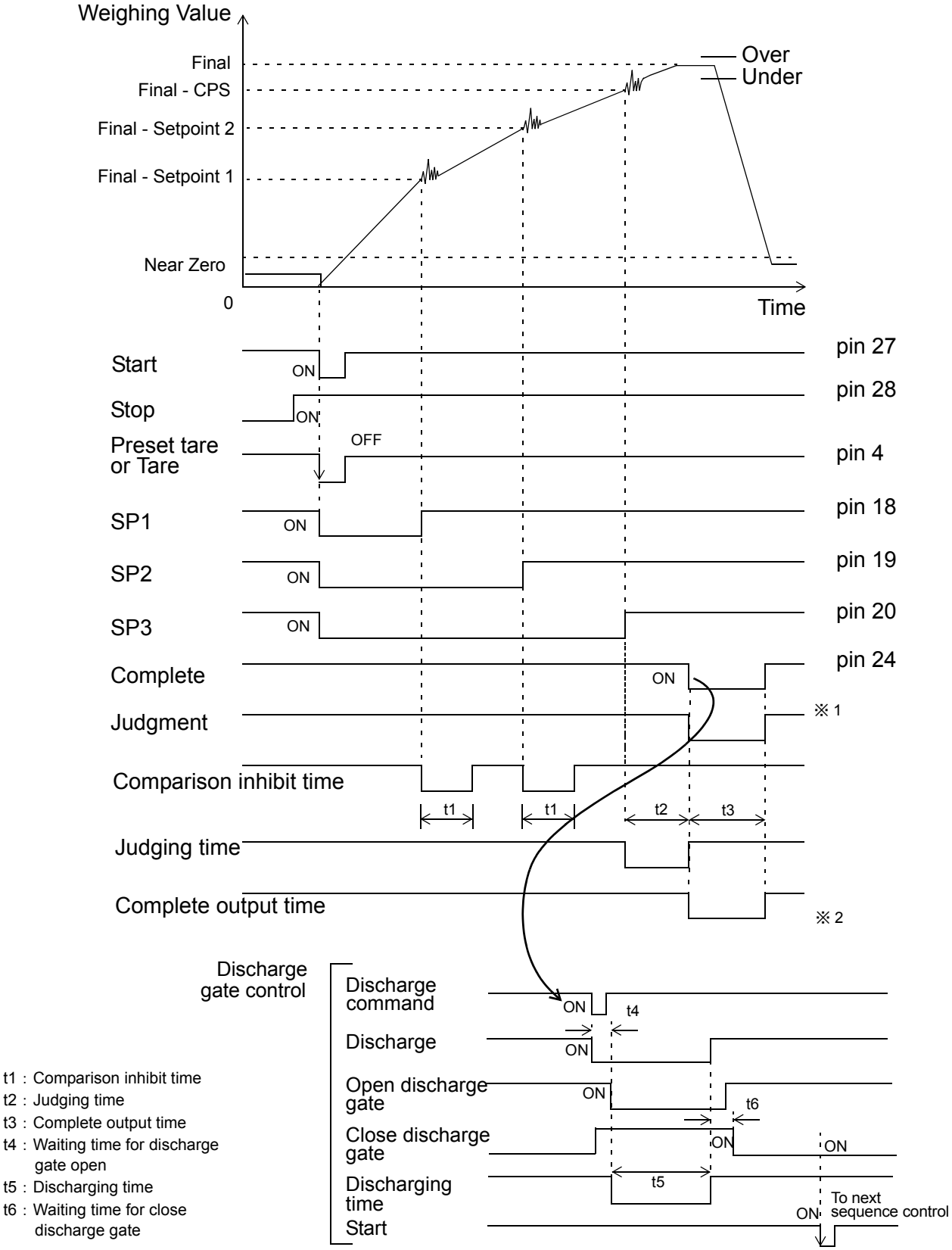


t1 : Comparison inhibit time
t2 : Judging time
t3 : Complete output time

※ 1: The timing of Over/Under Comparison is when complete signal is ON while weighing value is held, regardless of any setting in Over/Under Comparison Mode.

※ 2: The Output timing of Complete Signal is follows the setting in Complete Signal Output. Upper/Lower Limit Comparison becomes COMP. Regularly, regardless of any setting in Upper/Lower Limit 2.

7-11. Sequential with the Discharge gate control



t1 : Comparison inhibit time
t2 : Judging time
t3 : Complete output time
t4 : Waiting time for discharge gate open
t5 : Discharging time
t6 : Waiting time for close discharge gate

※ 1: The timing of Over/Under Comparison is when complete signal is ON while weighing value is held, regardless of any setting in Over/Under Comparison Mode.

※ 2: The Output timing of Complete Signal is follows the setting in Complete Signal Output. Upper/Lower Limit Comparison becomes COMP. Regularly, regardless of any setting in Upper/Lower Limit 2.

1. Confirm the Close Discharge Gate input signal is ON at start weighing sequence. If the input is OFF, sequence error 9 is indicated.
   The error display is reset after Close Discharge Gate signal turns ON.

2. Confirm the Close Discharge Gate input signal keeps ON, until Complete output signal turns ON. During this period if the input is OFF, sequence error 6 is indicated and stops weighing.

3. After the Complete output signal turns ON, triggering Discharging Command goes to ON. Then the Discharge output signal turns ON.

4. After the Discharge output signal turns ON, if the Open Discharge Gate does not turn ON after the Discharge Time plus 2 seconds, the sequence error 8 is indicated.
   (t4 ≧ t5 ＋ 2s)
   The error display is reset after Open Discharge Gate signal turns ON.

5. After the Open Discharge Gate turns ON and the Discharging time (t5) expires, the Discharge signal turns OFF.

6. After the Discharge output signal turns OFF and Discharging time plus 2 seconds has passes, if the Close Discharge Gate input does not turn ON, sequence error 9 is indicated. (t6 ≧ t5 ＋ 2s)
   The error display is reset after Close Discharge Gate signal turns ON.

7. While the Close Discharge Gate input signal turns ON, the weighing cycle is finished.

After feeding, during the operation of Discharge gate control, input “STOP” signal could not stop the operation.

● Normally, the Close Discharge Gate and Open Discharge Gate pins are connected with Dip Switch. If they are not used, short the pins to COM please.

7-12. Compulsory Discharging

1) Compulsory discharging is carried out when the sequence error Err1 ~ 7 happen or weighing is not carried out.

2) The sequence error is reset by shorting (OFF → ON) pin 30 (Compulsory Discharging Command) to COM and the Discharge (pin 42) signal turns ON.

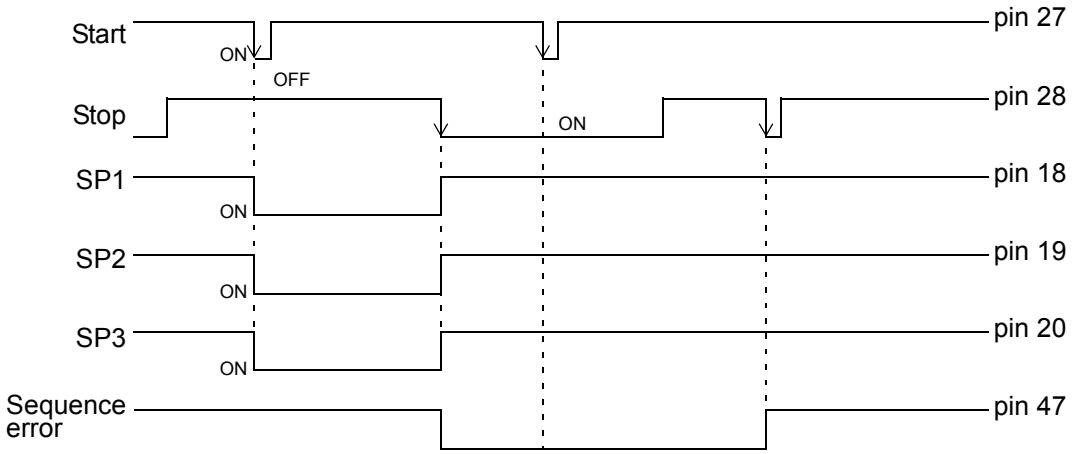
3) Confirmation of the Discharge Gate (Open & Close) input is carried out in the same way as the normal discharge.

7-13. Stop Signal

Except sequence error 3 when errors happen, ON → OFF the Stop signal, re-input Start signal.

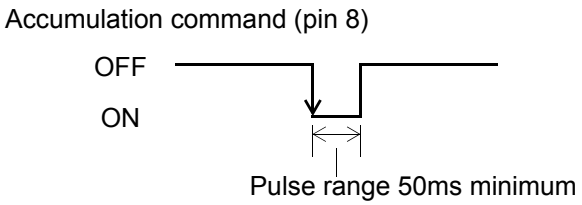
When sequence error 3 happens, need to find out the reason caused Near Zero alarm and solves it at first, refer to manual regarding to Digital Zero, then ON → OFF the Stop signal, re-input Start signal.

Stop signal



8. Accumulation・Statistics Data

The weight value can be accumulated to each ingredient code number. When Auto Accumulation is selected in Function setting mode, after Complete output signal gets ON the weight value will be added, otherwise by Accumulation Command via pin 8 of Control I/O on the rear panel.



The accumulated weight could be Gross or Net weight, which is selected in Over / Under Comparison 1 of the Comparison Mode.

8-1. Data Display

Weight values will accumulate when the Auto Accumulation Command is ON.
The statistics data is accumulated by each code, there are 100 Codes in F805A and the statistics data is sorted individually. They are AVG., MAX., MIN. WEIGHT, GEN., SMP. DEVATION, CNT. OF DATA, LATEST DATA and MAX. - MIN. respective to each code number.

Operation

MODE → DATA → ⊕ or ⊖

The Code number can be selected by pressing ⊕ or ⊖ key.
But when The " Weighing Code Selection " in the FUNCTION is selected " External Input ", the ⊕ ⊖ key will out off operation.
Display will be renewed by input signal via control I/O on the rear panel.

Calculation formula

n = number of times = count of data
$\Sigma \chi$ = accumulation = total amount
$\overline{\chi}$ = average = accumulation / number of times = $\Sigma \chi \,/\, n$

General Standard Deviation

$$\sigma_n = \sqrt{\frac{\sum_{i=n}^{n}(x_i - \bar{x})^2}{n}}$$

Use all the data of the finite population and find the standard deviation of the population.

Sample Standard Deviation

$$\sigma_{n-1} = \sqrt{\frac{\sum_{i=n}^{n}(x_i - \bar{x})^2}{n-1}}$$

Use the sample data among the population and the standard deviation of the population.

〈Example〉

Times (n)	Accumulation	Actual weighing value (latest)	Average	Max.	Min.	Max. −Min.	General S.D.	Sample S.D.	
0	0.000	0.000	0.000	0.000	0.000	0.000	error	error	← Accumulation clear
1	20.050	20.050	20.050	20.050	20.050	0.000	0.000	error	
2	40.090	20.040	20.045	20.050	20.040	0.010	0.005	0.007	
3	60.160	20.070	20.053	20.070	20.040	0.030	0.012	0.015	
4	80.240	20.080	20.060	20.080	20.040	0.040	0.016	0.018	
5	100.260	20.020	20.052	20.080	20.020	0.060	0.021	0.024	
6	120.260	20.000	20.043	20.080	20.000	0.080	0.027	0.030	
7	140.270	20.010	20.039	20.080	20.000	0.080	0.028	0.030	
8	160.250	19.980	20.031	20.080	19.980	0.100	0.033	0.035	
9	180.360	20.110	20.040	20.110	19.980	0.130	0.039	0.042	
10	200.370	20.010	20.037	20.110	19.980	0.130	0.038	0.041	

8-2. Accumulation Command

Select to receive the accumulation command regularly (REGULARLY) or to receive it only when the indicated value is stable (IN STABLE MODE).

Operation

MODE → EXTENDED FUNCTION → ACCUMULATION COMMAND →
Select REGULARLY/ INSTABLE MODE → OK

8-3. Accumulation Clear

Clear Accumulated Data (times, accumulation value and statistical data) for the selected Code.

Operation

MODE → EACH CODE → [+] or [−] → ACCUM. CLEAR
Select NO/ YES → OK

8-4. Total Comparison/ Total Limit/ Count Limit

It can compare with Accumulation value or Count limit of each code.
Moreover, it can select external output ON or OFF of the result of comparison.
Setting for each code is also possible.

1) Total Comparison
It is the selection whether compares with Accumulation value or not.
Select from COMP. OFF, Total COMP. ON, Total COMP. OFF, Count COMP. ON, or Count COMP. OFF. The Total comparison is conducted then "RUN" changes to "ACCUM." on the comparison screen and message screen when Total limit output is ON.

Comparison OFF
Comparison is not conducted. Pin49 becomes "RUN" signal.

Total Comparison ON
When Accumulation value >= Total limit setting value, it is considered as "Total limit".
External output is conducted. Pin49 becomes "Total limit" signal.

Total Comparison OFF
When Accumulation value >= Total limit setting value, it is considered as "Total limit".
External output is not conducted. Pin49 becomes "RUN" signal.

Count Comparison ON
When Accumulation counts >= Count limit setting value, it is considered as "Total limit".
External output is conducted. Pin49 becomes "Total limit" signal.

Count Comparison OFF
When Accumulation counts >= Count limit setting value, is considered as "Total limit".
External output is not conducted. Pin49 becomes "RUN" signal.

2) Total Limit
Set up the value for Total comparison. (Input range: 0 ~ 999999999)

3) Count Limit
Set up the value for Count comparison. (Input range: 0 ~ 9999)

Operation

1) MODE → EACH CODE → (Code No.) → PAGE → TOTAL COMP → Select COMP OFF/ TOTAL COMP ON/ TOTAL COMP OFF/ COUNT COMP ON/ COUNT COMP OFF → OK

2) MODE → EACH CODE → (Code No.) → PAGE → TOTAL LIMIT → Input 0~999999999 → OK

3) MODE → EACH CODE → (Code No.) → PAGE → COUNT LIMIT → Input 0~9999 → OK

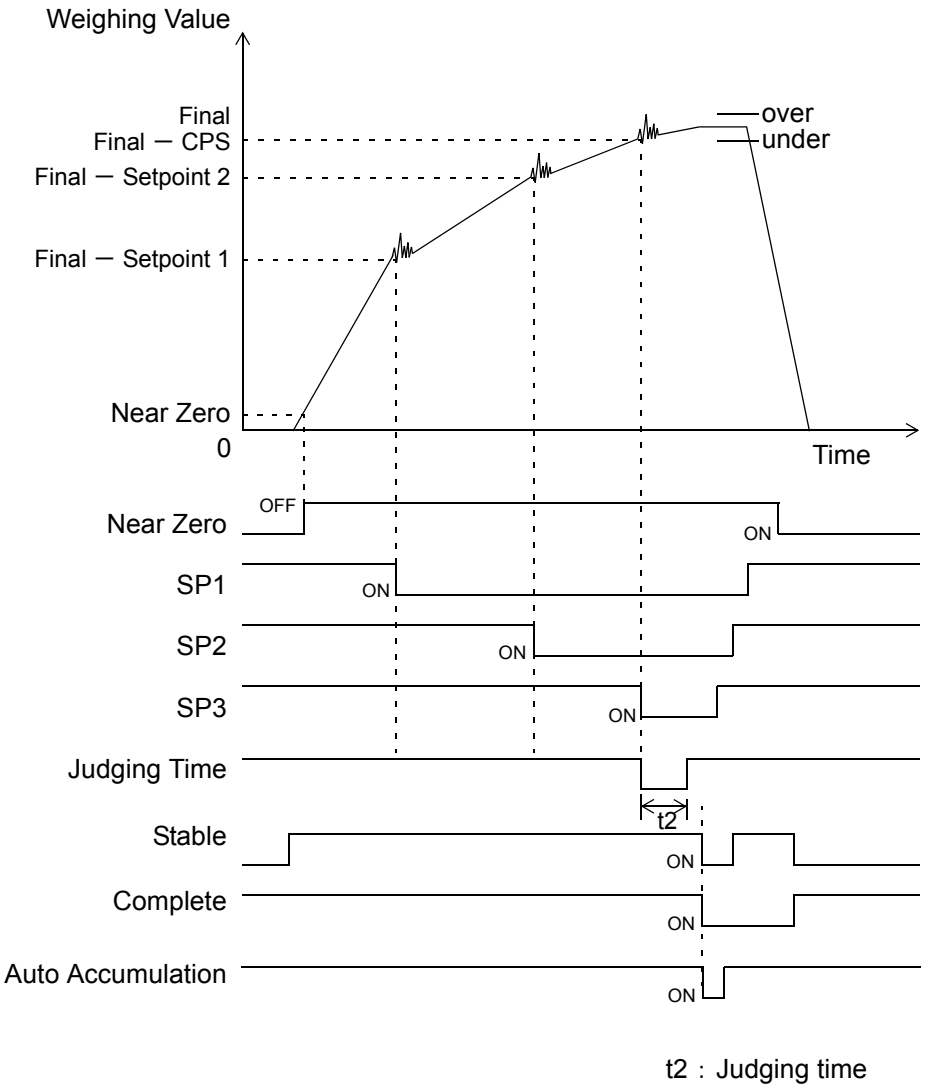
When "Total COMP ON" or "Count COMP OFF" in Total COMP Mode, "RUN" signal of pin 49 becomes "Total limit" signal.

8-5. Auto Accumulation Command

When Complete output signal turns ON, do auto accumulation to the active weighing code, value, times and statistical data. Also send out auto printer command via SI/F and SI/FII interfaces.

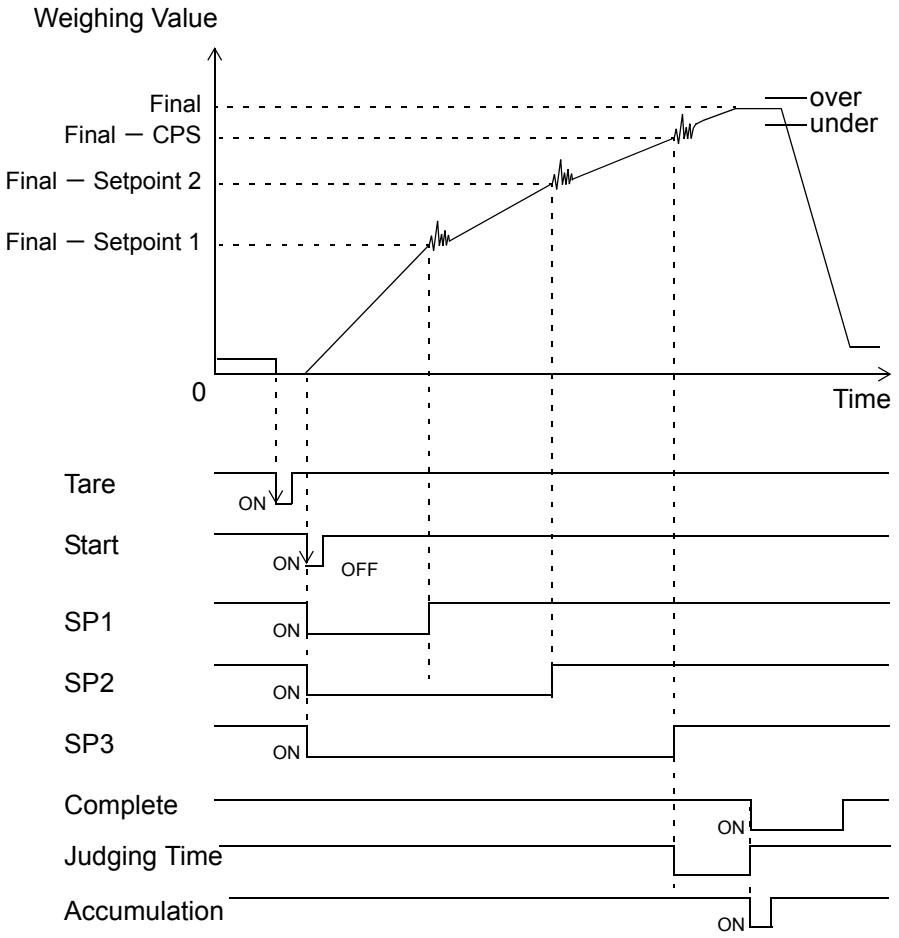
But if the weighing result is negative value, over scale or selected comparison OFF in Over/Under Comparison 1 of the Function, F805A do not do accumulation.

1) Simple comparison command



t2 : Judging time

2) Sequence control



Regarding Simple Comparison Control and Sequence with Judgment refer to (P.52 , P.54).

Operation

MODE → FUNCTION → AUTO ACCUM. COMMAND → Select ON/ OFF → OK

9. Graphic Screen

9-1. Graphic Drawing Point

X-axis：X-axis is for time setting.

One displayed drawing is between inputting start to the set time of X.

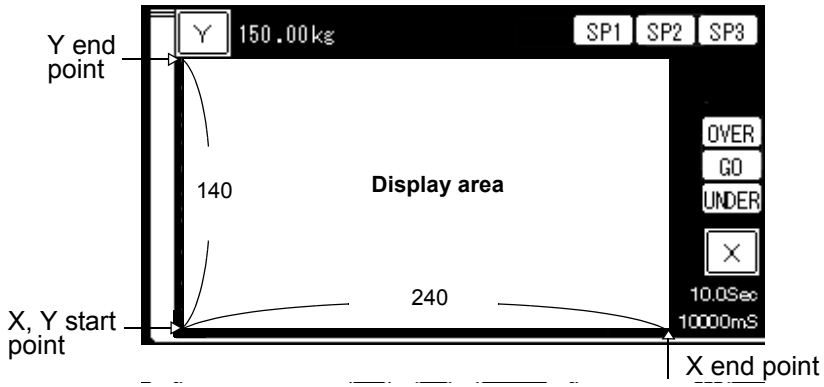
Drawing is consisted of 240 points, except 0 point.

The set time is divided by 240 drawing points, and represented value of each time will be shown on the graph screen.

Y-axis：Y-axis is for load setting.

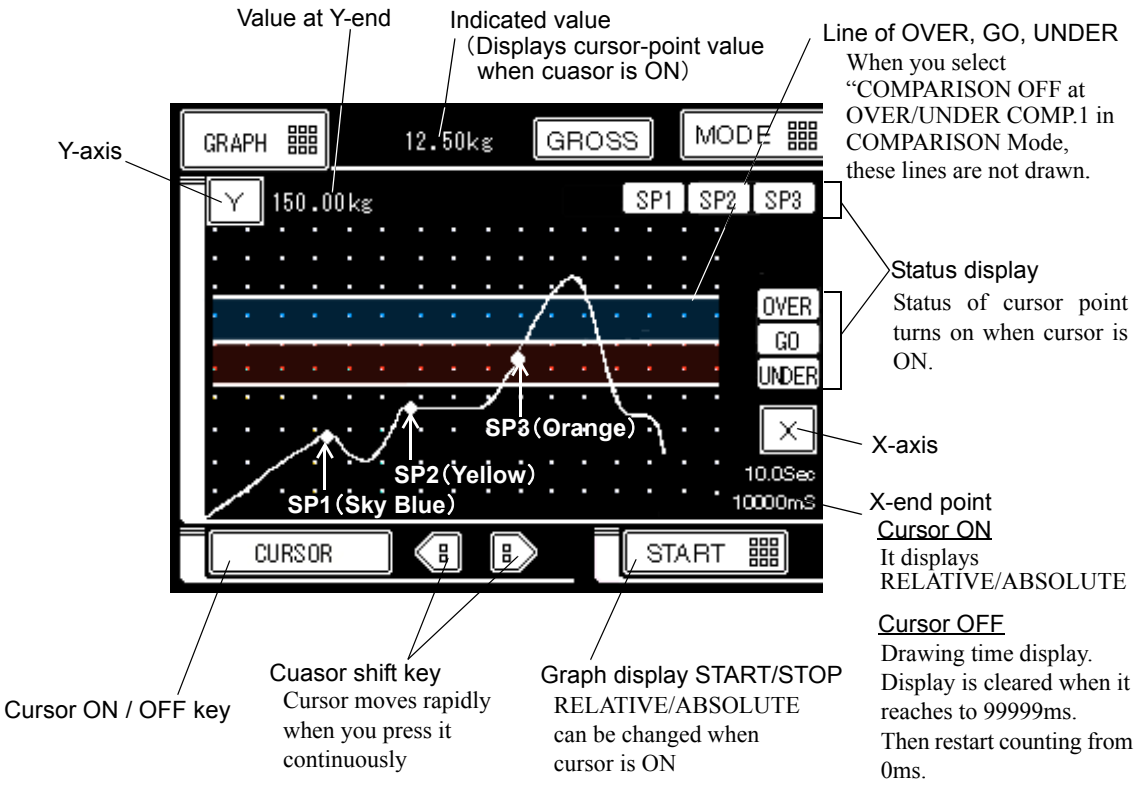
It shows the loads between the start set point to the end.

Drawing is consisted of 140 points, except 0 point.



9-2. Graphic Display

When you press MESSAGE on the Message Screen, it change to [GRAPH].



9-2-1. Relative Time / Absolute Time

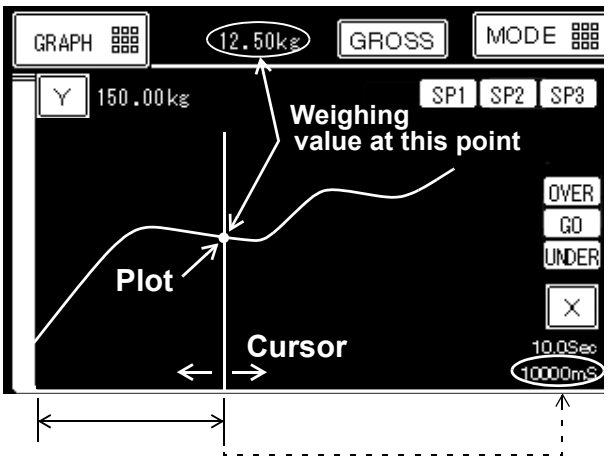
"START" switches to RELATIVE or ABSOLUTE when the cursor is ON.

When [RELATIVE] is pressed, it changes to [ABSOLUTE].

When [ABSOLUTE] is pressed, it changes to [RELATIVE].

ABSOLUTE Time

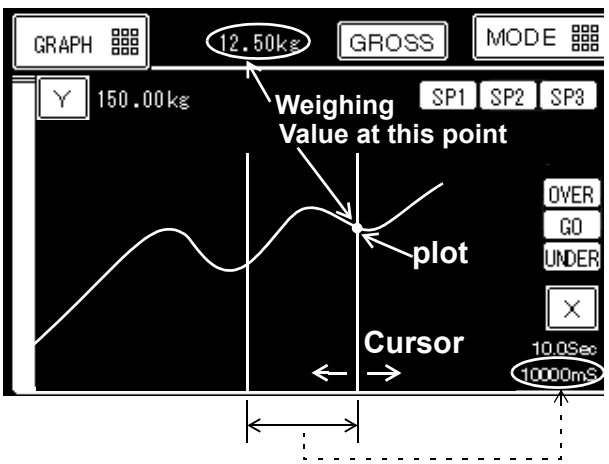
The time between start to the cursor point shows on the button of the right.



※ The color of plot on the cursor is corresponded to the color of Over Go and Under. It shows green when Over, Go and Under output signals are OFF.

RELATIVE Time

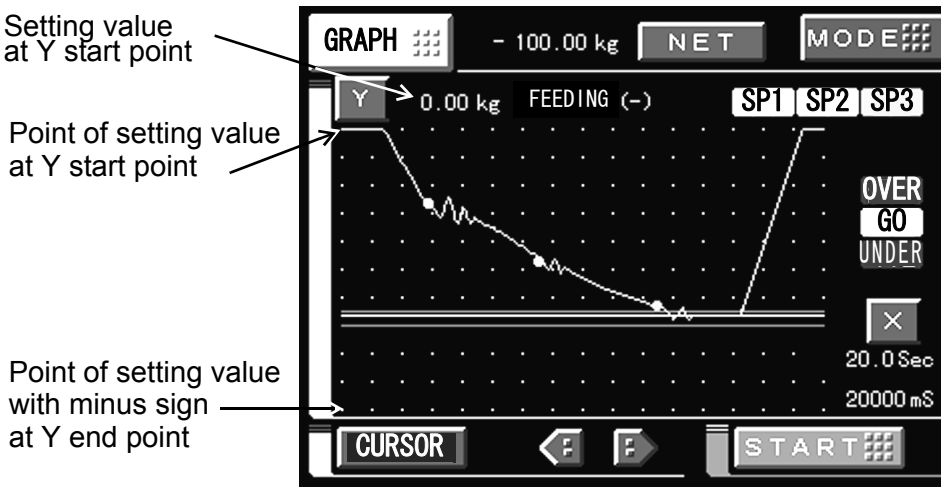
The time (Δ T) between the two cursors shows on the button of the right.



Only the plot on the intersection of the movable cursor with wave displays on the top.

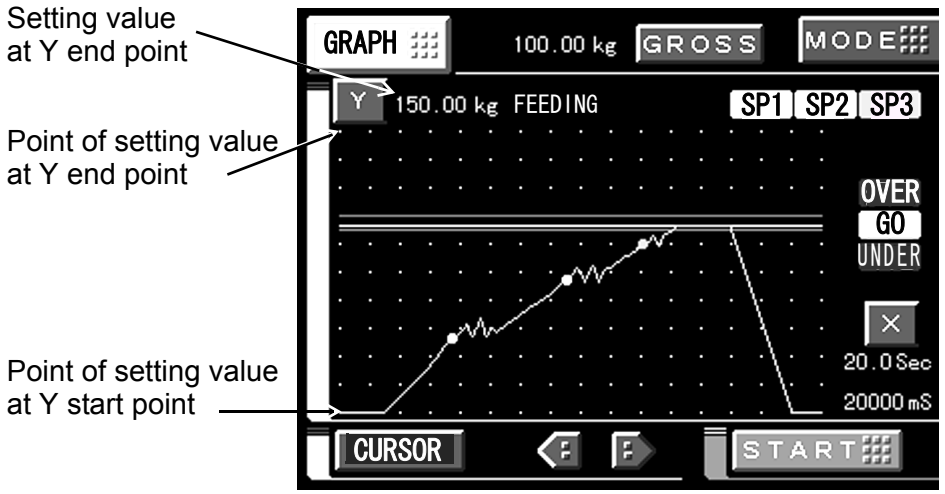
9-2-2. Graphic Drawing of Discharge Control

When conducting Discharge control in NET weighing, and Net weight with minus sign is selected, Y end point and Y start point are displayed on the lower part and upper part of the graphic screen respectively.
"Discharge (-)" is displayed on the upper part of the screen then the sign of setting value at Y end point and setting value of trigger level are reversed (as minus data).



When conducting Feeding control, Y start point on the lower part and Y end point on the upper part of the screen are displayed.
"Feeding" is displayed on the upper part of the screen.

When - Sign OFF is selected during Discharging, "Discharge (+)" is displayed on the upper part of the screen. Whereas the display regarding Y axis are as same as those of Feeding.



9-2-3. Graphic Mode

Select from Single, Continuity or Level.

Single : Only draws the line once to X End Point by pressing START or external input.

Continuity : Start drawing by pressing START or external input then repeat drawing continuously until STOP is pressed or externally inputted.

Level (↥)+exterior : Start the level detection by external input or START. When the indicated value exceeds the setting value of trigger level, starts the drawing then draws the line to X End Point once.

Level (↥↧)+ exterior : Start level detection by external input or START. When the indicated value passes the setting value of trigger level, starts drawing then draws the line to X End Point once.

Level (↥) : When the indicated value exceeds the setting value of trigger level, starts the drawing then draws the line to X End Point once.

Level (↥↧) : When the indicated value passes the setting value of trigger level, starts the drawing then draws the line to X End Point once.

Operation

MODE → GRAPH SETTING → GRAPHIC MODE → Select from SINGLE / CONTINUITY / LEVEL(↥) + EXT / LEVEL(↥↧) + EXT / LEVEL(↥) / LEVEL(↥↧) → OK

9-2-4. Trigger Level

Set the Trigger Level when the level is set in graphic mode.
(input range / 0 ~ 99999)

Operation

MODE → GRAPH SETTING → TRIGGER LEVEL → Input 0 ~ 99999 → OK

9-2-5. X (Time axis)-End Point

Set the range of X-axis (Time axis).
(input range /1.2 ~ 99.9)

Operation

MODE → GRAPH SETTING → X END POINT → Input 1.2 ~ 99.9 → OK

or X on the Graphic Screen → Input 1.2 ~ 99.9 → OK

9-2-6. Y (Weight)-Start Point

Set the Y-axis (Weight axis) start point.
(input range / 0 ~ 99998)

Operation

MODE → GRAPH SETTING → Y START POINT → Input 1 ~ 99999 → OK

9-2-7. Y (Weight)-End Point

Set the full scale of Y-axis (Weight axis).
(input range / 1 ~ 99999)

Operation

MODE → GRAPH SETTING → Y END POINT → Input 1 ~ 99999 → OK

or Y on the Graphic Screen → Input 1 ~ 99999 → OK

When Y End Point ≦ Y Start point is set.
Value at Y Start Point equals Value at Y End Point - 1.

10. System Mode

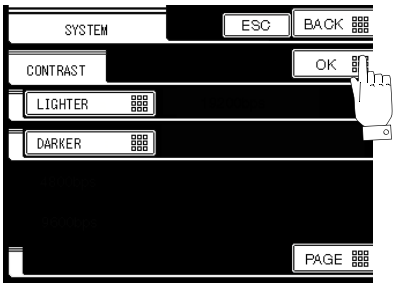
10-1. Contrast

Set the contrast of LCD display.

Operation

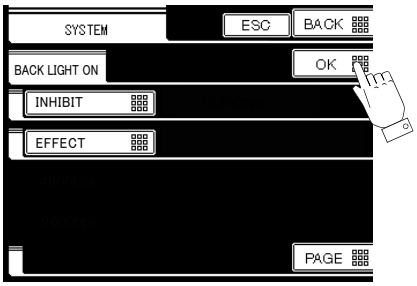
MODE → PAGE → SYSTEM → CONTRAST →
Press LIGHTER/ DARKER → OK

Screen turns lighter gradually by pressing [LIGHTER].
Conversely, it turns darker by pressing [DARKER].
Press [OK] where you get proper contrast.



10-2. Back Light ON

When 'EFFECT' is selected in Back Light ON, in Simple comparison mode after weighing and complete output signal turns ON; in Sequence control mode after input Start signal the back light on.



Operation

MODE → PAGE → SYSTEM → BACK LIGHT ON → Select Effect/ Inhibit → OK

※ Ignore the selection here, when F805A power on and touch screen the Back Light turns on.

10-3. Back Light OFF

The function which turns off the back light of screen when touch screen has not been used for a certain period of time.
The back light will not turns off if you set 00. (input range / 0 ~ 99)

Operation

MODE → PAGE → SYSTEM → BACK LIGHT → Input 0 ~ 99 → OK

10-4. Self-Check

The function which checks the operation status of F805A itself.
If you find any problem, please contact us or our sales agent for repairing.

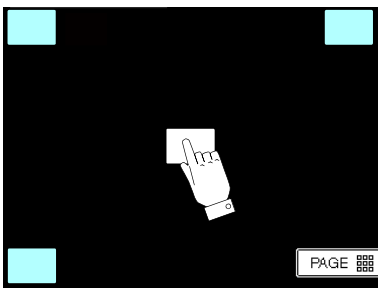
Operation

MODE → PAGE → SYSTEM → SELF CHECK → Select YES/ NO → OK

1) Touch panel check

Each blue square turns yellow when you press it. Check whether the each square reacts correctly.

Press [PAGE] to proceed to next page.

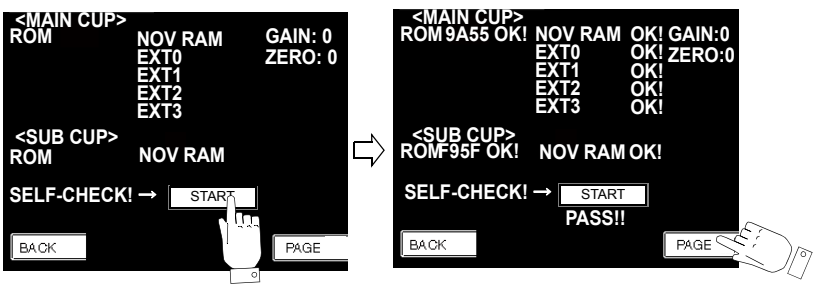


2) Memory check

Start NOV. and RAM. checking by pressing [START].
PASS is displayed when it is working normally. NG is displayed in the reverse case.

Press [PAGE] to proceed to next page when you finished the checking.

(Press [BACK] to return to the previous page).



3) Display check

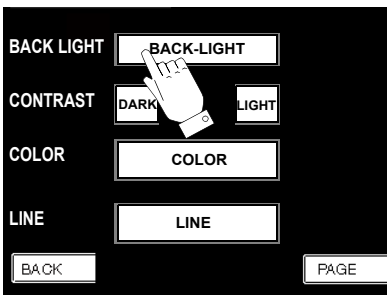
Start checking by pressing each button (BACK LIGHT, CONTRAST, COLOR or LINE).

Press [BACK - LIGHT] tag, turns dark, touch screen returns to display check.

Contrast	Screen turns lighter by pressing [LIGHT] . It turns darker by pressing [DARK] .
Color	Color changes in turn. White → Black → Red → Green → Blue.
Line	Displays Lateral strip → Verticl strip in turn.

Press [PAGE] to proceed to the next page after checking each item respectively.

(Press [BACK] to return to the previous page).



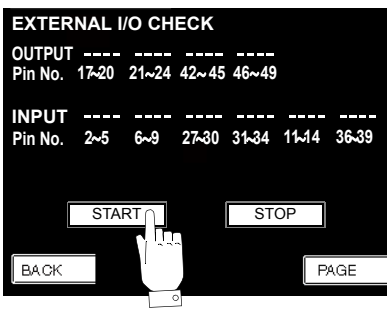
4) Input / Output check

Check external input / output signal.

Signal are outputted via pin 17 ~ 24 and 42 ~ 49 in turn of control I/O connector on the rear panel by pressing [START] . The output status " - " show " 0 ".

Output signals are stopped by pressing [STOP] .

The input status " - " show " 0 " when signals are inputted via control I/O pin 2~9, 11~14, 27~34 and 36~39 on the rear panel.



5) BCD out check (BCO)
6) BCD in check (BCI)
7) D/A check (DAC)

These are only indicated when option board is mounted.

・BCD output board check (BCO)

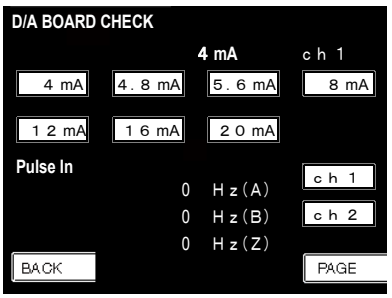
Check I/O signal of the BCD parallel data output interface.
Signals are outputted via pin 2~18 and 20~26 in turn of BCD output connector on the rear panel by pressing [START].
The indication of output status " - "changes to "0".
Output signals are stopped by pressing [STOP].
The input status " - " shows " 0 " when signals are inputted via pin 27 ~ 34 of the BCD output connector on the rear panel.

・BCD input board check (BCI)

Check I/O signal of the BCD parallel data input interface.
Signals are outputted via pin 27 ~ 34 in turn of the BCD input connector on the rear panel by pressing [START].
The output status " - " show " 0 ".
Output signals stop by pressing [STOP].
The input status " - " show " 0 " when signals are inputted via pin 2 ~ 18 and 20 ~ 26 of the BCD input connector on the rear panel.

・D/A board check（DAC）

Check the output of D/A converter.
Select channel of output signal by pressing [ch1] / [ch2] key.
Indicated current is outputted by pressing [4 mA] ~ [20 mA].



※ Pulse input is not used here.

＊ There are no self-check screens concerning SI/F, SIF II, RS-232C and RS-485.

10-5. System Speed

A/D conversion rate can be selected from 200 times/second or 1000 times/second.

10-6. Language

English version or Japanese version can be selected by pressing LANGUAGE tab of the System mode.

Operation

MODE → PAGE → SYSTEM → LANGUAGE → Select ENGLISH / JAPANESE → OK

10-7. Password

To release the software Lock, release the alarm of Near Zero and initialize instrument by entering the password.

Operation

MODE → PAGE → SYSTEM → PASSWORD → Input 1269 → OK →
PASSWORD → ••••••

Input password '1269' releasing the software lock;
When input password '1111' releasing the alarm of Near Zero;
When input password '6842' initializing set value of the instrument.
(The memorized setting value in NOV. and RAM. can not be changed by above processing.)

10-8. Lock (soft)

Lock for protecting from false operation, refer to "The List of Initial Setting Value Screen Display / Contents" on page 135 regarding effective setting value for LOCK (soft).
Select from ON / OFF.

Operation

MODE → PAGE → SYSTEM → LOCK (soft) → Select ON / OFF → OK

Notice

Unless inputting password 1269 beforehand, LOCK OFF cannot be executed.

11. Interface

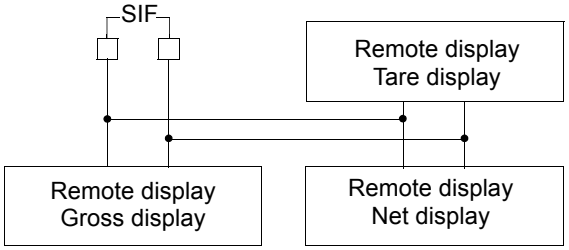
11-1. SI/F 2-Wire Serial Interface

This 2-wire serial interface is for connecting F805A to peripheral equipment such as printers or remote displays. No polarity is needed for this simple, low-cost installation.
The transmitting distance is about 300m (328yds).

● Connection

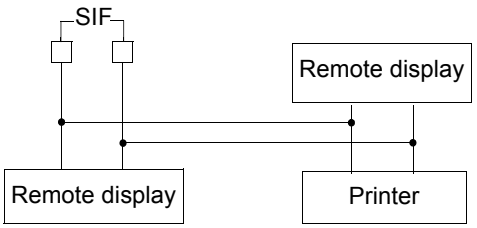
Up to 3 peripheral units can be connected in parallel.
The wire may be 2-core twisted or shielded cable. It should not run along side AC or other high-voltage wiring.

Example 1:



Up to 3 remote displays can be connected. The each display can display individual content according to the selection

Example 2:



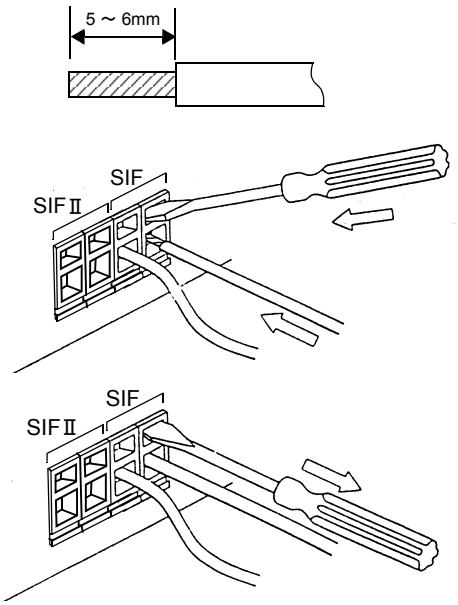
These indicated above are examples for the connection of Remote displays. Each display can select the data individually.

The Lock, SI/F. terminal on the rear panel is a Cage Clamp. Connection is simple and easy.

(1) Strip the casing 0.2 in (6mm) on the cable to be connected.
(2) Twist the bare wire to fit the terminal hole.

(3) Insert the supplied screwdriver into the upper hole and lift upward.
(4) Insert the twisted wires into the lower hole.

(5) Pull the screwdriver out from the upper hole.
(6) Make sure cable is clamped securely and does not come out with a slight tug.



Notice

- Cable can be from 24 to 14AWG (0.2 to 2.5㎜ ㎡). Do not solder the cablewires or fix a solderless terminal.
- If several cables to be inserted to the same hole, twist those cable wires together and insert

● Auto print command

The F805A gives an automatic print command to any device connected by SI/F interface. In Simple Comparison Mode the automatic print command is sent when the Complete output signal turns ON. In Sequence with Judgement the automatic print command is sent when judgement output signals (Over, Go, Under) turn ON. In sequence without Judgement the automatic print command cannot be sent out.
Also, when weighing result is Negative or Over scale, the automatic print command can not be sent out.

11-2. SI/FII High Speed Bi-Directional 2- Wire Serial Interface

SF/FII is a high speed bi-directional serial interface for connecting F805A to various peripheral Devices. These include printers, remote displays, converters (D/A, BCD-IN, BCD-OUT, RS-232C) as well as PLC's (Mitsubishi CC-Link, Omron CompoBus/D, Yokogawa FAM3, Allen-Bradley Open DeviceNet).
Up to 20 devices may be connected by 2-core parallel or shielded cable with polarity.

● Connection

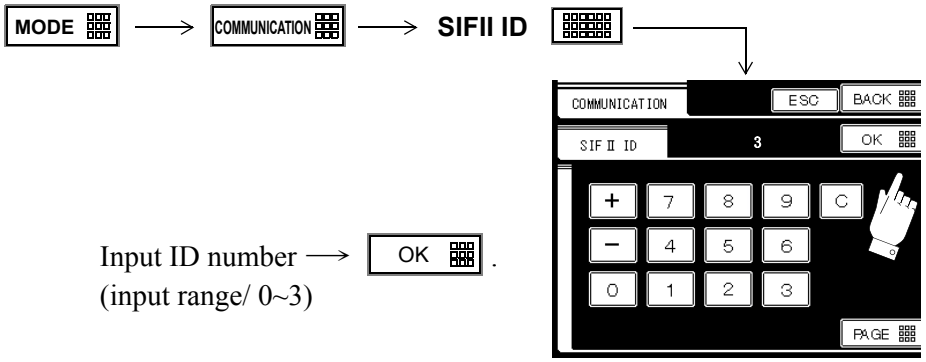
In this network up to 4 weighing controllers (specified by different ID numbers) are connected by SI/FII positive to positive, negative to negative.
The M350 printer serves up to 4 coded simultaneous sources, in one of 32 statistical categories. The LD517 remote display accumulates or sums up to 4 coded simultaneous sources.
Our converters (E924, E928, E930, E232) allow the 4 coded sources to communicate with PC's or PLC's.

● Auto print command

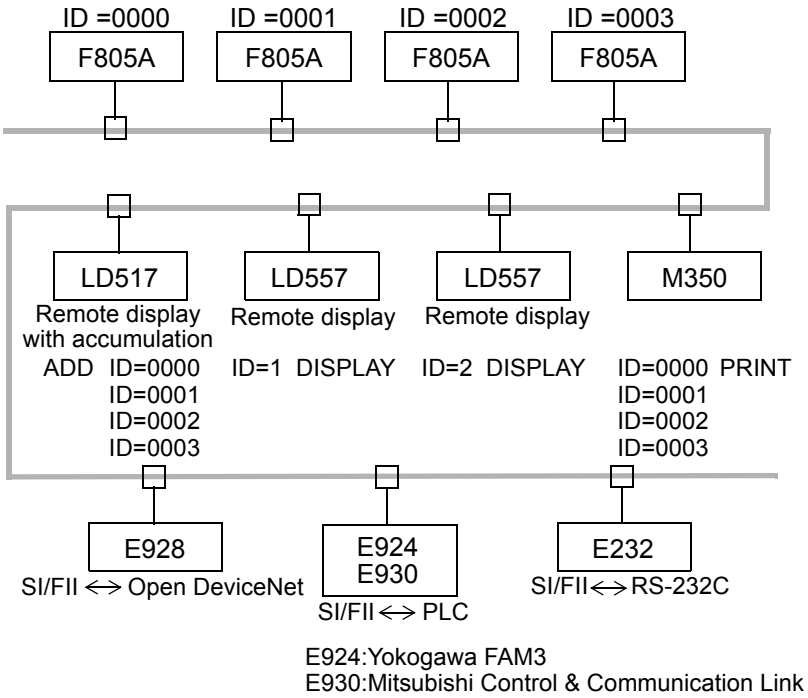
The F805A gives an automatic print command to any device connected by SI/FII interface. In Simple Comparison Mode the automatic print command is sent when the Complete output signal turns ON. In Sequence with Judgement Mode the automatic print command is sent when judgement output signal Over, Go or Under turns ON. In sequence without Judgement Mode the automatic print command cannot be sent out.
Also, when weighing result is Negative or Over scale, the automatic print command cannot be sent out.

● ID Number setting

Set ID number for each F805A in the SIFII network.



Input ID number ⟶ OK .
(input range/ 0~3)



E924:Yokogawa FAM3
E930:Mitsubishi Control & Communication Link

11-3. RS-232C Interface

11-3-1. Communication Specifications

1. Specifications

Signal level	: Based on the RS-232C
Transmitting distance	: Approx. 15m (16.4yd.)
Transmitting method	: Asynchronous, full duplex
Transmitting speed	: 1200, 2400, 4800, 9600 or 19200 bps selectable
Bit configuration	: Start 1 bit Character length 7 or 8 bits selectable Stop 1 or 2 bits selectable Parity none, odd or even selectable
Code	: ASCII

2. Connector pin assignment

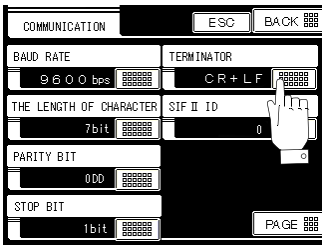
Adaptable plug: 9-pin D-SUB connector

1			6	in	DSR
2	in	RXD	7	out	RTS
3	out	TXD	8	in	CTS
4	out	DTR	9		
5	*	GND			

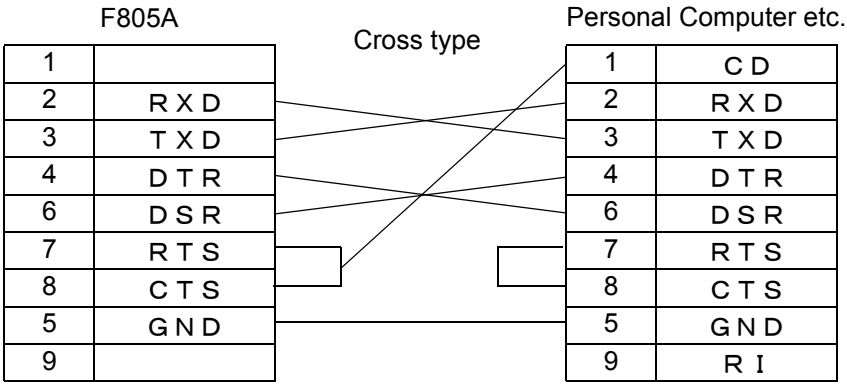
11-3-2. Setting Values for RS-232C

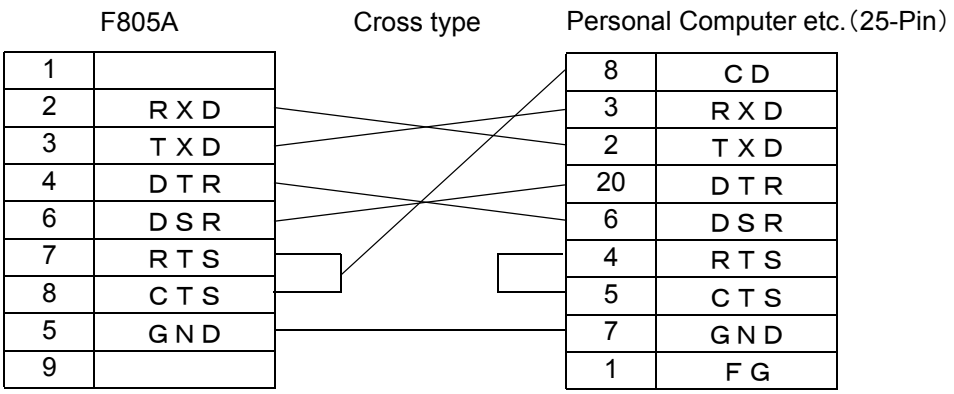
The initial set for RS-232C port of connecting Personal Computer and Sequencer should be as the same setting as F805A.

Set each item below.
- Baud rate
- The length of character
- Parity bit
- Stop bit
- Terminator



11-3-3. Cable





The above diagram is for connecting a personal computer as a DTE (Data Terminal Equipment) device. If it is a DCE (Data Circuit-terminating Equipment) device, connect pin to pin (DTR to DTR, DSR to DSR etc.).

Cables should be prepared after checking connector type and pin assignments of the connected device.

11-3-4. Sample Program

This program enables to preset a tare weight in F805A then readout each net weight from F805A and displays it. (Because this program is only for N88-BASIC, it should be modified when you use other device.)

```
100 CLS
110 OPEN “COM : 071NN” AS #1        ’Parity        ODD
120                                 ’Data bit  7  , Stop bit  1
130                                 ’Xon/Xoff Invalid, SI/SO Invalid
140 PRINT #1, "CD"                  ’Display switchover Net Weight command
150 PRINT #1, "CF"                  ’Tare Subtraction Reset Command
160 ’
200 INPUT "TARE weight =" ,TARE
210 IF TARE>99999 THEN GOTO 200
220 TARE$ = STR$ (TARE)
230 TARE$ = RIGHT$ (    "0000" +RIGHT$ (TARE$, LEN(TARE$)-1), 5)
240 ’
250 PRINT #1,"W51" +TARE$                   ’Preset Tare Weight Writing
260 PRINT #1,"W51" : INPUT #1,CHK$          ’Preset Tare Weight Reading
270                                         ’Setting Date Check
280 IF CHK$< > "W51"+TARE$ THEN PRINT  "Missing data!" :GOTO 200
290 ’
300 PRINT #1, "RG" : INPUT #1,ST4$          ’Status 4 Reading
310 PRINT #1,  "RB": INPUT #1,NET$          ’Net Weight Reading
320 NET = VAL (RIGHT$ (NET$,7))
330 PRINT "Net weight =" ;
340 IF MID$ (ST4$,6,1)<> "0" THEN PRINT  "Error"
                                    ELSE PRINT USING  "###.###kg";NET
350 GOTO 300
```

11-3-5. Communication Format

・Read out the Gross weight (sign, 5-digt weighing value, decimal point)

HOST	R	A	CR									
F805A	R	A	+	1	0	0	.	0	0	CR	LF	

・Read out the Net weight (sign, 5-digit weighing value, decimal point)

HOST	R	B	CR									
F805A	R	B	+	1	0	0	.	0	0	CR	LF	

・Read out the Tare (sign, 5-digit weighing value, decimal point)

HOST	R	C	CR									
F805A	R	C	+	1	0	0	.	0	0	CR	LF	

・Status 1 (7-digit)

HOST	R	D	CR								
F805A	R	D	0	0	0	0	0	0	0	CR	LF

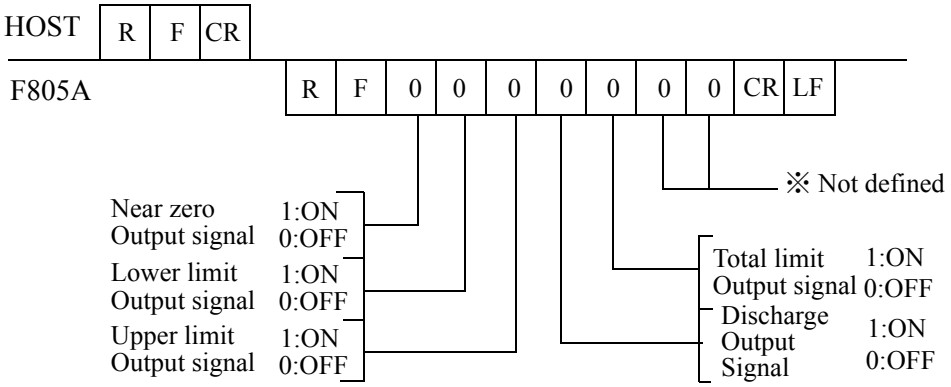
Weighing value Hold 1:ON 0:OFF
Weighing value Zero alarm 1:ON 0:OFF
Weighing value Stable 1:ON 0:OFF
Tare subtracted 1:ON 0:OFF
LOCK (soft) 1:ON 0:OFF
Rear panel LOCK 1:ON 0:OFF
Weight display 1:Net 0:Gross

・Status 2 (7-digit)

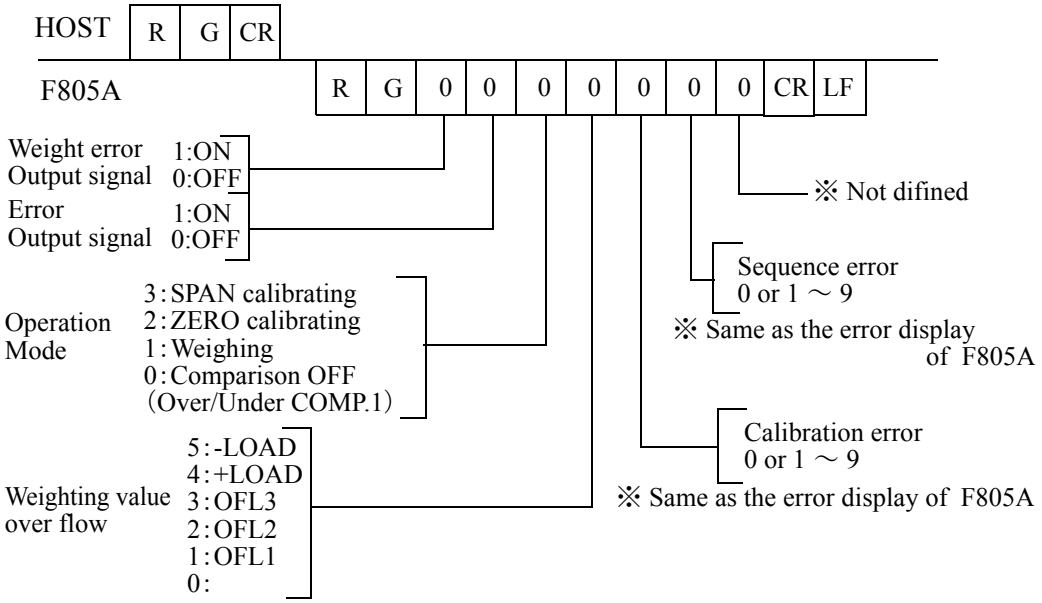
HOST	R	E	CR								
F805A	R	E	0	0	0	0	0	0	0	CR	LF

SP1 Output signal 1:ON 0:OFF
SP2 Output signal 1:ON 0:OFF
SP3 Output signal 1:ON 0:OFF
Complte Output signal 1:ON 0:OFF
Over Output signal 1:ON 0:OFF
Go Output signal 1:ON 0:OFF
Under Output signal 1:ON 0:OFF

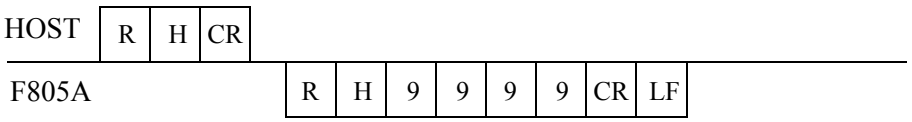
・Status 3 (7-digit)



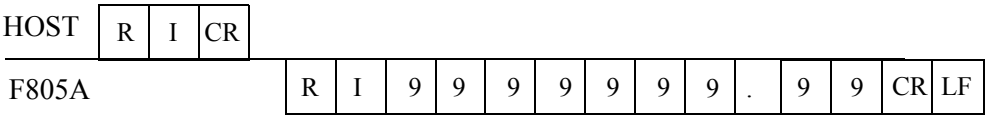
・Status 4 (7-digit)



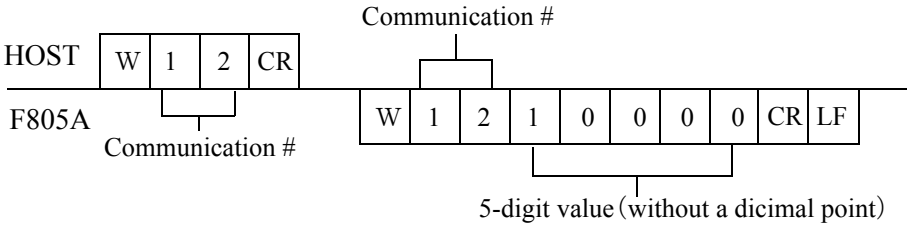
・Read out the Count of Data (accumulation times) (4-digit)



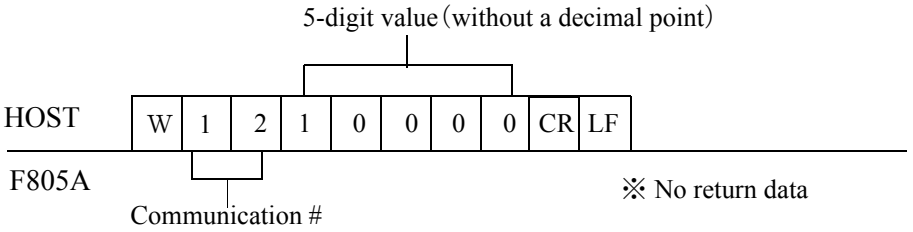
・Read out the accumulated value (9-digit, decimal point)



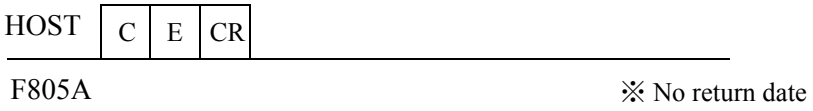
・Read out the set value (ex. the Final value)



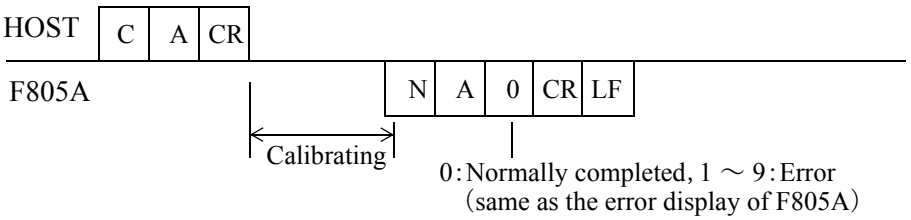
・Write in the set value (ex. the Final)



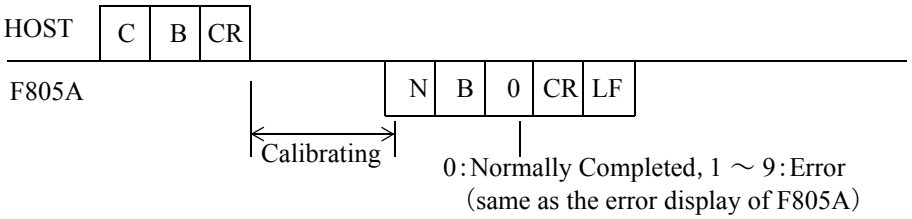
・Command (ex. Tare Subtraction)



・Zero calibration

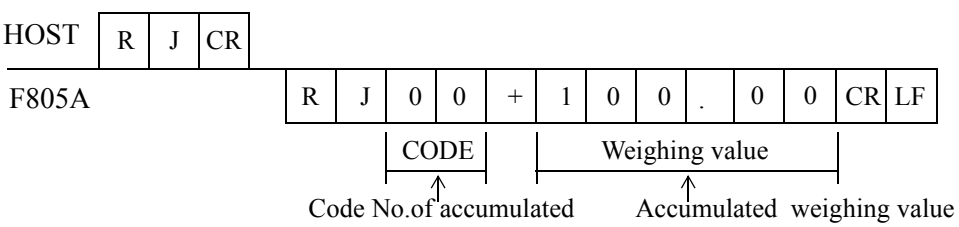


・Span calibration

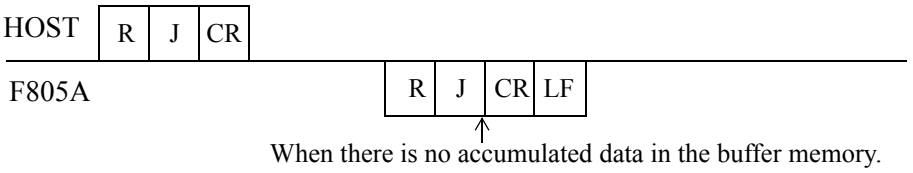


※ Before sending this command, set the Capacity, Min. Scale division and Balance Weight.

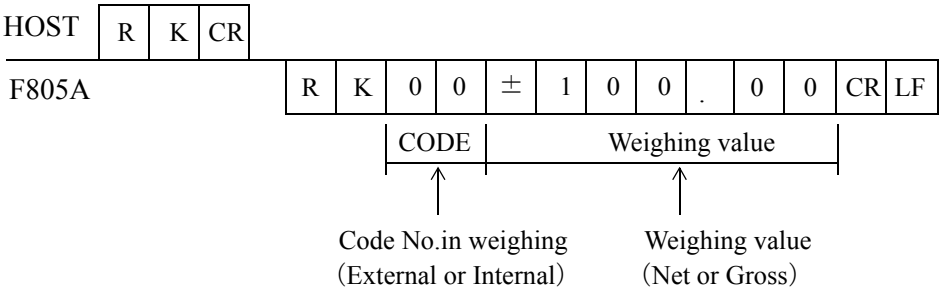
・Read out the accumulated weight



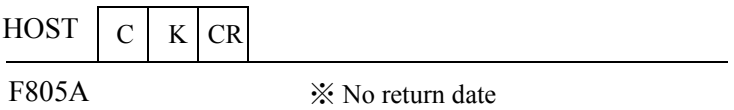
※ Up to 256 data entries are stored in the memory buffer. Oldest data will be cleared when buffer is read.



・Read out the weighing data



・Clear all Accumulated weighing values (all 100 Code numbers)



11-3-6. RS-232C Table for Reading Out Set Value ・Writing in Command

Communication #

CODE No.

W	0	0	0	0	0			CR	LF	(For each code number)

Set Point 1

W	1	0						CR	LF	(For each code number)

Set Point 2

W	1	1						CR	LF	(For each code number)

Final

W	1	2						CR	LF	(For each code number)

Over

W	1	3	0	0				CR	LF	(For each code number)

Under

W	1	4	0	0				CR	LF	(For each code number)

CPS

W	1	5	0					CR	LF	(For each code number)

AFFC Regulation

W	1	6						CR	LF	(For each code number when Lock(soft) cannot write in)

COMP Feeding Time

W	1	7	0	0				CR	LF	(For each code number when Lock(soft) cannot write in)

Total COMP

W	1	8	0	0	0	0		CR	LF	(For each code number)

Total Limit

W	1	9										CR	LF	(For each code number)

Count Limit

W	1	A	0	0				CR	LF	(For each code number)

*Designate the code number when reading out and writing the setting value in each code.
*When writing in the setting value, it is necessary to select Valid in Each Code Key.

U/L Limit Comparison 1

W	2	0	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

U/L Limit Comparison 2

W	2	1	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Upper Limit

W	2	2						CR	LF	(When Lock(soft) cannot write in)

Lower Limit

W	2	3						CR	LF	(When Lock(soft) cannot write in)

Near Zero Comparison

W	2	4	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Near Zero

W	2	5						CR	LF	(When Lock(soft) cannot write in)

Over/Under Comparison 1

W	2	6	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Over/Under Comparison 2

W	2	7	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Complete signal Output

W	2	8	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Complete Output time

W	2	9	0	0	0			CR	LF	(When Lock(soft) cannot write in)

Judging Time

W	2	A	0	0	0			CR	LF	(When Lock(soft) cannot write in)

Comparison Inhibit Time

W	2	B	0	0				CR	LF	(When Lock(soft) cannot write in)

Discharging Control Mode

W	2	C	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Auto CPS Coefficient

W	2	D	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

AFFC

W	2	E	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Average Count of AFFC

W	2	F	0	0	0	0		CR	LF	(When Lock(soft) cannot write in)

Communication #

Display Freguency

W	3	0	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Digital Filter 1

W	3	1	0					CR	LF

(When Lock(soft) cannot write in)

Analog Filter

W	3	2	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Digital Filter 2

W	3	3	0	0	0	①	②	CR	LF

(When Lock(soft) cannot write in) Note:1

MD(Period)

W	3	4	0	0	0			CR	LF

(When Lock(soft) cannot write in)

MD(Range)

W	3	5	0	0	0			CR	LF

(When Lock(soft) cannot write in)

Zero Tracking(Period)

W	3	6	0	0	0			CR	LF

(When Lock(soft) cannot write in)

Zero Tracking(Range)

W	3	7	0	0	0			CR	LF

(When Lock(soft) cannot write in)

DZ Regulation Value

W	3	8	0					CR	LF

(When Lock(soft) cannot write in)

Sequence Mode・Near Zero Confirmation at start
Weighing Value confirmation at start・Adjust Feeding・Discharge Gate Control

W	4	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in) Note:2

Judging Times

W	4	1	0	0	0			CR	LF

(When Lock(soft) cannot write in)

AZ Times

W	4	2	0	0	0			CR	LF

(When Lock(soft) cannot write in)

Dischargeing Time

W	4	3	0	0	0			CR	LF

(When Lock(soft) cannot write in)

START/STOP Key

W	4	4	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Preset Tare Weight 1・Gross/Net Selection・Discharging Control Mode
TARE/DZ Key・GROSS/NET Key

W	5	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in) Note:3

Preset Tare WGT 1

W	5	1						CR	LF

(When Lock(soft) cannot write in)

Auto ACCUM. Command

W	5	2	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Weighing Code SEL.

W	5	3	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Setting Code SEL.

W	5	4	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Each Code Key

W	5	5	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Communication #

Balance Weight Value

W	6	0						CR	LF

(When Lock(soft/hard) cannot write in)

Capacity

W	6	1						CR	LF

(When Lock(soft/hard) cannot write in)

MIN. Scale Division

W	6	2	0	0				CR	LF

(When Lock(soft/hard) cannot write in)

Net Over

W	6	3						CR	LF

(When Lock(soft) cannot write in)

Gross Over

W	6	4						CR	LF

(When Lock(soft) cannot write in)

Decimal Place

W	6	5	0	0	0	0		CR	LF

(When Lock(soft/hard) cannot write in)

Unit Display

W	6	6	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

1/4 Scale DIV. Display

W	6	7	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

GRAV.Acceleration

W	6	8	0	0	0			CR	LF

(When Lock(soft) cannot write in)

Load cell Excitation

W	6	9	0	0	0	0		CR	LF

(When Lock(soft/hard) cannot write in)

Graphic Mode

W	7	0	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Trigger Level

W	7	1						CR	LF

(When Lock(soft) cannot write in)

X (Time) End Point

W	7	2	0	0				CR	LF

(When Lock(soft) cannot write in)

Y (Weight) Start Point

W	7	3						CR	LF

(When Lock(soft) cannot write in)

Y (Weight) End Point

W	7	4						CR	LF

(When Lock(soft) cannot write in)

AVG Weight

W	8	0	CR	LF

(Read out only)

MAX. Weight

W	8	1	CR	LF

(Read out only)

Min. Weight

W	8	2	CR	LF

(Read out only)

GEN.STAN.DEV

W	8	3	CR	LF

(Read out only)

SMP.STAN.DEV

W	8	4	CR	LF

(Read out only)

MAX.－MIN.

W	8	5	CR	LF

(Read out only)

Communication #

LOCK(soft)

W	9	0	0	0	0	0		CR	LF

LANGUAGE

W	9	1	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

System Speed

W	9	2	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Back Light ON

W	9	3	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Back Light OFF

W	9	4	0	0	0			CR	LF

(When Lock(soft) cannot write in)

Accumulation command, One-Touch Tare SUB., Range of Tare SUB.,
Tare Display, EXT. Preset Tare SUB.

W	A	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in) Note:4

SIFII ID

W	A	1	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Over Scale

W	A	2	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

D/A Output Mode

W	B	0	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

D/A Zero Output

W	B	1						CR	LF

(When Lock(soft) cannot write in)

D/A Full Scale

W	B	2						CR	LF

(When Lock(soft) cannot write in)

D/A Output CH

W	B	7	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

Data Update Rate

W	B	6	0	0	0	0		CR	LF

(When Lock(soft) cannot write in)

* When writing in WB0-WB2, designate output channel by WB7 first then take the interval of 500mSec. or more.

(Note:1)

Digital Filter2 ・ MD Mode

W	3	3	0	0	0	①	②	CR	LF

(When Lock(soft) cannot write in)

① Digital Filter 2
② Motion Detection Mode

(Note:2)

Sequence Mode ・At Start Near Zero Confirmation
At Start Weighing Value Confirmation ・Adjust Feeding・Discharge Gate Control

W	4	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in)

① Sequence Mode
② At Start Near Zero Confirmation
③ At Start Weighing Value Confirmation
④ Adjust Feeding
⑤ Discharge Gate Control

(Note:3)

Preset Tare Weight 1 ・ Gross/Net Selection ・ Discharging Control Mode
Tare/DZ Key ・Gross/Net Key

W	5	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in)

① Preset Tare Weight 1
② Gross/Net Selection
③ Discharging Control Mode
④ Tare/DZ Key
⑤ Gross/Net Key

(Note:4)

Accumulation command, One-Touch Tare SUB., Range of Tare SUB.,
Tare Display, Extended Preset Tare SUB.

W	A	0	①	②	③	④	⑤	CR	LF

(When Lock(soft) cannot write in)

① Accumulation Command
② One-Touch Tare SUB.
③ Range of Tare SUB.
④ Tare Display
⑤ Extended Preset Tare SUB.

Each code

- Total COMP. Mode
  0 : COMP. OFF 1 : Total COMP. ON 2 : Total COMP. OFF
  3 : Count COMP. ON 4 : Count COMP. OFF

Comparison setting

- U/L Limit Comparison 1
  0 : Gross Weight 1 : Net Weight 2 : Comparison OFF
- U/L Limit Comparison 2
  0 : COMP. Regularly 1 : EXT. Judging ON
- Near Zero Comparison
  0 : Gross Weight 1 : Net Weight 2 : Comparison OFF
  3 : Absolute Gross 4 : Absolute Net
- Over/ Under Comparison 1
  0 : Gross Weight 1 : Net Weight 2 : Comparison OFF
- Over/ Under Comparison 2
  0 : COMP. Regularly 1 : EXT. Judging ON 2 : COMP. Signal ON
  3 : COMP. ON Hold
- COMP. Signal Output
  0 : Judging Time 1 : Judge & Stable 2 : Judge/ Stable
- DISCHG. CNTL. Mode
  0 : Feeding 1 : Discharging 2 : External
- Auto CPS Coefficient
  0 : 1 1 : 3/4 2 : 2/4 3 : 1/4
- AFFC（Auto Free Fall Compensation Regulation）
  0 : AFFC OFF 1 : AFFC ON

Operation setting

- Display Frequency
  0 : 3 Times/ Sec. 1 : 6 Times/ Sec. 2 : 13 Times/ Sec. 3 : 25 Times/ Sec.
- Analog Filter
  0 : 2 Hz 1 : 4 Hz 2 : 6 Hz 3 : 8 Hz
- Digital Filter 2
  0 : ON 1 : OFF
- MD Mode
  0 : Stable Mode 1 : Checker Mode

Sequence mode

- Sequence Mode
  0 : SIMP. COMP. Mode 1 : Sequence Mode
- At Start NZ CONF.
  0 : OFF 1 : ON
- At Start WV Confirmation
  0: OFF 1 : ON
- Adjust Feeding
  0 : OFF 1 : ON
- Discharge Gate Control
  0: OFF 1 : ON
- Start/ Stop Key
  0 : Invalid 1 : Valid

Function

- Preset Tare Weight 1
  0 : OFF 1 : ON
- Auto ACCUM. Command
  0 : OFF 1 : ON
- Weighing Code SEL.
  0 : Key Specify 1 : External Input 2 : Selection
- Setting Code SEL.
  0 : Key Input 1 : External Input 2 : Selection
- Gross/Net SEL.
  0 : INT. Key Mode 1 : EXT. Input Mode
- DISCHG. CNTL. Sign
  0 : - Sign ON 1 : - Sign OFF
- Tare/DZ Key
  0 : Invalid 1 : Valid
- Gross/Net Key
  0 : Invalid 1 : Valid
- Each Code Key
  0 : Invalid 1 : Valid

Extended Function Setting

- Accumulation Command
  0 : Regularly 1 : In Stable Mode
- One-Touch Tare SUB
  0 : Regularly 1 : In Stable Mode
- Range of Tare SUB.
  0 : Whole Range 1 : 0 < Tare <= CAPA.
- Tare Display
  0 : Inhibit 1 : Tare Key ON
- Extended Preset Tare SUB
  0 : Inhibit 1 : Effect
- Over Scale
  0 : BLINKING 1 : ERROR ONLY

Calibration

- Decimal Place
  0 : 0 1 : 0.0 2 : 0.00 3 : 0.000
- Unit Display
  0 : kg 1 : g 2 : N 3 : t 4 : lb 5 : none
- 1/4 Scale DIV. DIS.
  0 : OFF 1 : ON
- Load cell EXC.
  0 : 5V 1 : 10V

Graph setting

- Graphic Mode
  0 : Single 1 : Continuity 2 : Level (↥) +Exterior
  3 : Level (⇅) +Exterior 4 : Level (↥) 5 : Level (⇅)

System

・Lock（soft）
0：OFF 1：ON
・Language
0：Japanese 1：English
・System Speed
0：200 times/Sec. 1：1000 times/Sec.
・Back Light ON
0：Inhibit 1：Effect

Option

・D/A Output Mode
0：4mA fixed output 1：20mA fixed output 2：InterLock(G) 3：InterLock(N)
・D/A Output ch
0：ch1 1：ch2
・Data Update Rate
0：SYSTEM SPEED 1：100 Times/Sec. 2：50 Times/Sec. 3：20 Times/Sec.
4：10 Times/Sec. 5：5 Times/Sec. 6：2 Times/Sec. 7：1 Times/Sec.

11-3-7. RS-232C Command

Zero calibration	C	A CR	Digital zero	C	G CR
Span calibration	C	B CR	Digital zero reset	C	H CR
Gross selection	C	C CR	Accumulation command	C	I CR
Net selection	C	D CR	Accumulation clear	C	J CR
Tare subtraction	C	E CR	Accumulation data all clear	C	K CR
Tare reset	C	F CR	Back light ON	C	L CR

12. Interface (Option)

12-1. BCD Parallel Data Output Interface [(BCO) Option]

The BCD Data Output Interface is for transferring weighing values in BCD (Binary Coded Decimal) form to PC's PLC's or Sequences for controlling, processing and recording data. The internal and External circuits are opto-isolated.

12-1-1. Connector pin assignment

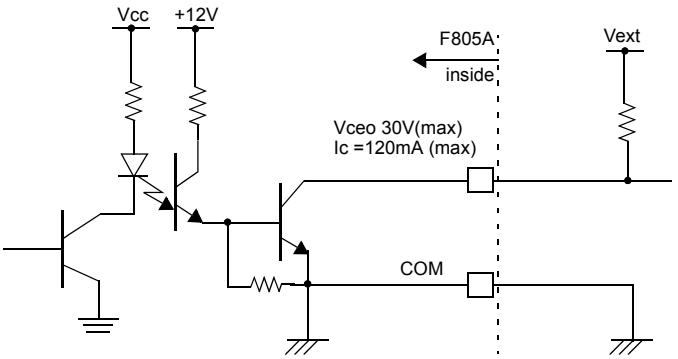
Adaptable plug : DDK 57-30360 or equivalent one

1	*	COM	19	*	COM
2	out	1	20	out	20000
3	out	2	21	out	40000
4	out	4	22	out	80000
5	out	8	23	out	minus
6	out	10	24	out	over
7	out	20	25	out	auto accumulation
8	out	40	26	out	strobe
9	out	80	27	in	data hold
10	out	100	28	in	logic switch
11	out	200	29	in	output selection1
12	out	400	30	in	output selection2
13	out	800	31	in	
14	out	1000	32	in	
15	out	2000	33	in	
16	out	4000	34	in	
17	out	8000	35		
18	out	10000	36		

* The connection terminals (COM ; Pin 1 and 19) are connected inside.
* The commom torminals are connected to the common (COM) of input/Output signal inside.
* No power voltage output.

12-1-2. Equivalent output circuit

The signal output circuit is open-collector output of the TTL.



● status of internal transistor

output data	negative	positive
0	OFF	ON
1	ON	OFF

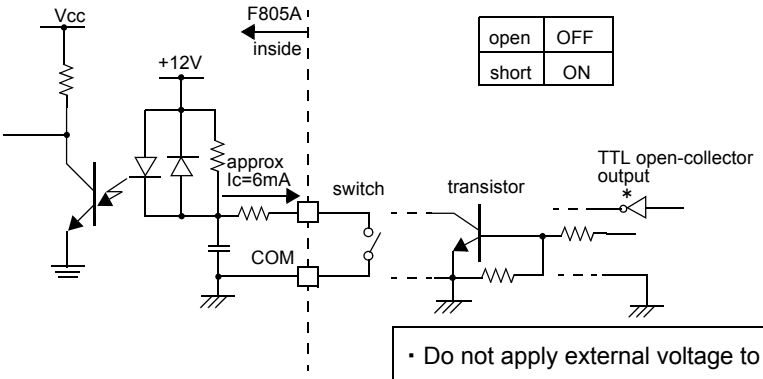
Pin 28 : logic change

● output pin level

output data	negative	positive
0	H	L
1	L	H

12-1-3. Equivalent input circuit

Signals are inputted by short-circuiting or opening between the input terminals and the COM terminal. Contacts (a relay, a switch) or contactless switches (a transistor, a TTL of open-collector output) are used for short-circuitting.



open	OFF
short	ON

・Do not apply external voltage to the signal input circuit.
・Use external elements which withstand Ic=10mA.
・Leakage of extemal elements must be less than 100 μ A.

12-1-4. BCD data output

The weighing values are outputted in 5-digit equivalent 4-bit BCD data.

digit data	8	4	2	1
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1

12-1-5. Polarity output (minus)

The output polarity of weighing values by BCD are "0" for plus and "1" for minus.

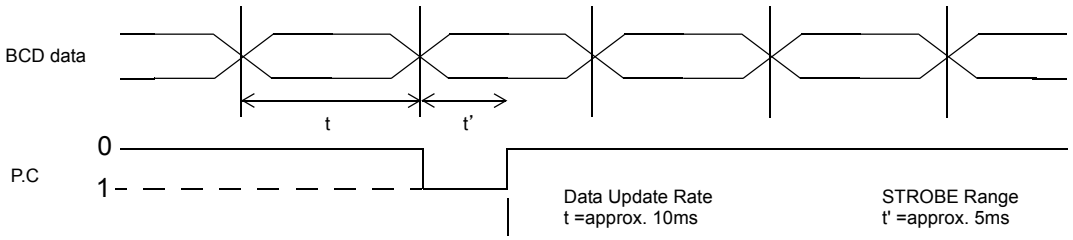
12-1-6. Over status output (over)

The output of weighing values by BCD is 1 (over) under the conditions below.

Weighting Value	Conditional Formula	Display
Net weight	When Net weight > set Net Over	OFL1
Gross Weight	When Gross Weight > set Gross Over	OFL3
Tare	When Tare > 99999	no display
Gross weight	When DZ > DZ Reguration Value	ZALM blinks

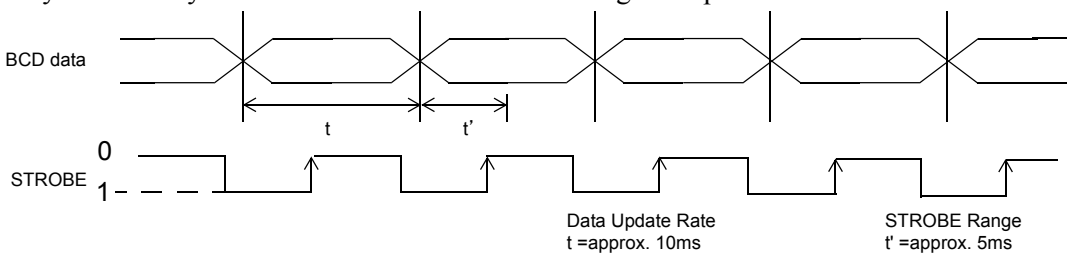
12-1-7. Auto Accumulation Command

Auto accumulation will occur after weighing when Auto Accumulation Command is ON in Function Mode or by shortiong pin 8 to COM on the Contorol Connector.
The BCD output gives a pulse signal while accumulating.
Use the end edge of a pulse to read data.



12-1-8. Data strobe (strobe)

The BCD data is renewed by each A/D conversion and a strobe pulse is output synchronously with the BCD data. Use the end edge of a pulse to reach data.



12-1-9. Data Hold input

The BCD data is held when this input terminal shorted to COM.
(No strobe pulse output during Hold.)

12-1-10. Logic switch input

Change the output logic. Open：negative. Short：positive.

12-1-11. Output selection input

Select the output weighing value by BCD code.

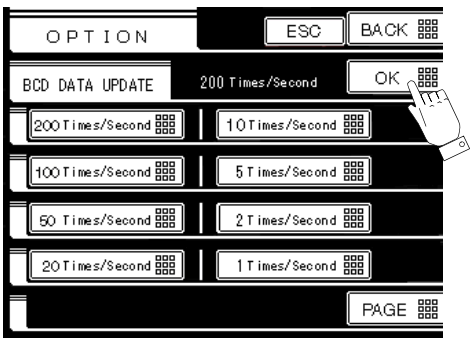
selection1	selection2	weighing value
open	open	Follow F805A display
open	short	Net weight
short	short	Gross weight
short	open	Tare

12-1-12. Setting BCDOUT

Operation

1) MODE → PAGE → OPTION

2) Select a update rate you want to set by pressing BCD DATA UPDATE RATE, then press OK button.



Correlation between BCD Data Updata Rate and Strobe Range

System Speed	STOROBE range	*
100 times/second	STOROBE range	Approx. 5msec
50 times/second	STOROBE range	Approx. 10msec
20 times/second	STOROBE range	Approx. 25msec
10 times/second	STOROBE range	Approx. 100msec
2 times/second	STOROBE range	Approx. 250msec
1 time/second	STOROBE range	Approx. 500msec

* System Speed is selected 1000times/sec STOROBE range Approx.0.5msec
System Speed is selected 200times/sec STOROBE range Approx.2.5msec

12-2. BCD Parallel Data Input Interface [(BCI) Option]

The BCD Data Input Interface is for transferring weighing values in BCD（Binary Coded Decimal）form from PC's, Dip switches or Sequences with a BCD output. The internal and external cir-cuits are opto-isolated.

12-2-1. Connector pin assignment (BCD input)

1	＊	COM	19	＊	COM
2	in	1	20	in	20000
3	in	2	21	in	40000
4	in	4	22	in	80000
5	in	8	23	in	DATA CODE 1
6	in	10	24	in	DATA CODE 2
7	in	20	25	in	DATA CODE 4
8	in	40	26	in	STROBE
9	in	80	27	out	ACK（Acknowledged）
10	in	100	28	out	NAK（Error）
11	in	200	29	out	
12	in	400	30	out	
13	in	800	31	out	
14	in	1000	32	out	
15	in	2000	33	out	
16	in	4000	34	out	
17	in	8000	35		
18	in	10000	36		

＊ The common terminals （COM；Pin 1 to 19）are connected inside.

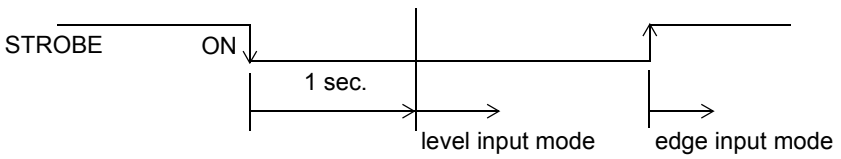
＊ The common terminals are connected to the COM of external I/O signal inside.

＊ No power voltage output

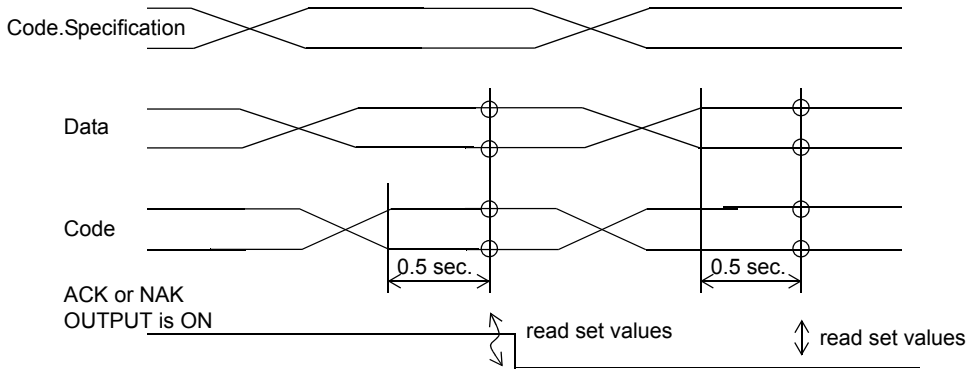
12-2-2. Equivalent circuit

Refer to "Equivalent output circuit" on page 102 " and "Equivalent input circuit" on page 102 .

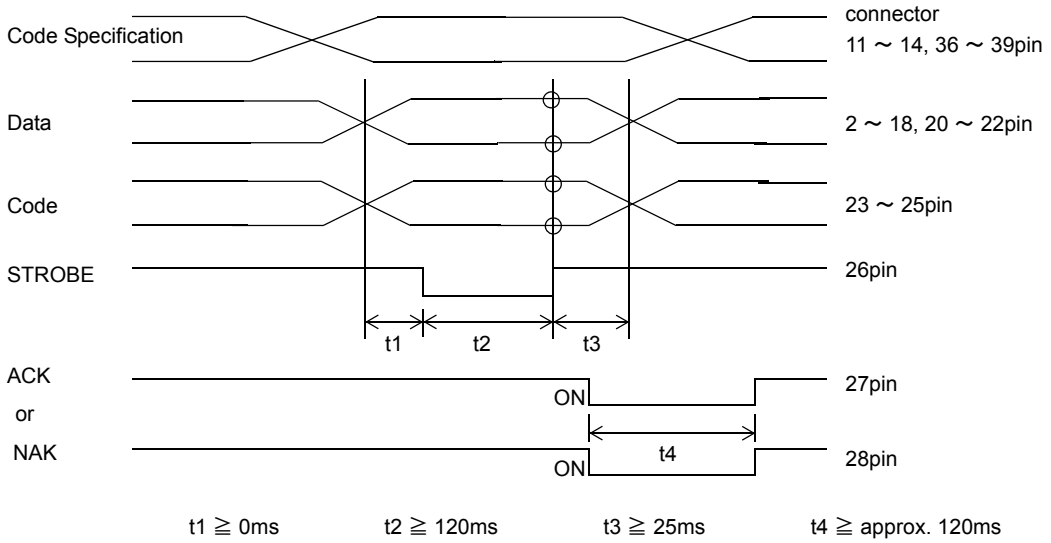
12-2-3. Reading setting values



12-2-4. Level input mode (strobe input, short-circuited)



12-2-5. Edge input mode



・Data and Code input by short-circuit：short=1 ; open=0

・When strobe inputs change from short to open（edge of 1 → 0）, data or code input status is entered.

・When data is entered normally, ACK has a pluse output.

・When data is not equal to hexadecimal code ［A ～ F］,NAK has a pulse output.
（Setting values do not change.）

12-2-6. Data Code 1,2 and 4 [Pin 23, 24 and 25]

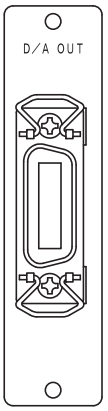
4	2	1	SETTING VALUES
open	open	open	Final ※
open	open	short	CPS ※
open	short	open	Tare
open	short	short	Near Zero
short	open	open	Upper
short	open	short	Lower

Change the Setting values to select Code through the exterrnal input.

12-3. D/A Converter [(DAC) option]

The D/A Converter Interface sends an analog signal for each weighing value (constant-current output 4 ~ 20mA). Current over range limit is ± 10% range of full scale.
Analog output 0 (4mA) to full scale (20mA) are available for any digital value set in function of D/A zero setting and D/A full scale.
The body-circuit is isolated from the output circuit.
The resolution is 16 bits and the conversion rate is 1000 times/sec.

12-3-1. External Output Port



Pin assignment

Adaptable plug : DDK-57-30140 or equivalent one

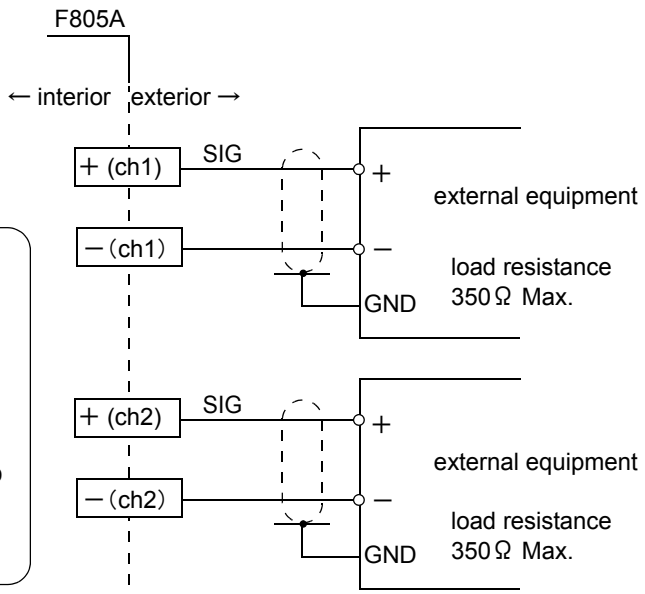
1	+ (ch1)	8	+ (ch2)
2	− (ch1)	9	− (ch2)
3		10	
4		11	
5		12	
6		13	
7		14	

Notice

As 3 ~7 pins and 10 ~14 pins are unnecessary for this use, they should not be connected.
Do not apply any voltage from outside or do not shorten the circuit by mistake.
It may cause some problem on F805A itself or external equipment .

・Taking out Current output signal

Connect an external equipment (load resistance 350 ohm max.) between + (ch1) ~ - (ch1) or + (ch2) ~ - (ch2) of F805A.



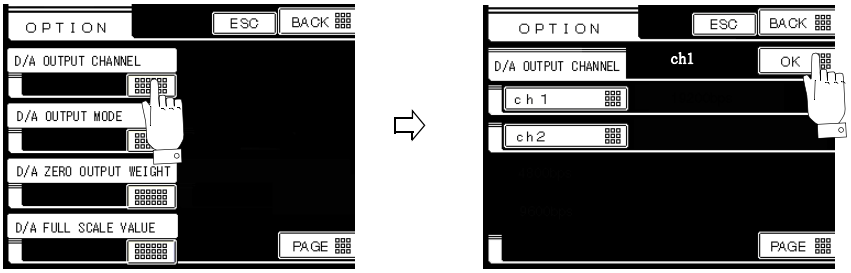
Notice

- D/A converter is an option.
- Do not apply any external voltage or current because it causes some damage to D/A converter.
- If capacity load is connected to the converter it may cause oscillation.

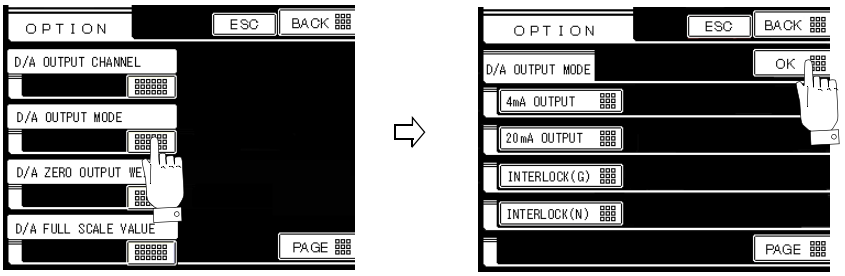
12-3-2. Setting D/A Converter

1) MODE → PAGE → OPTION

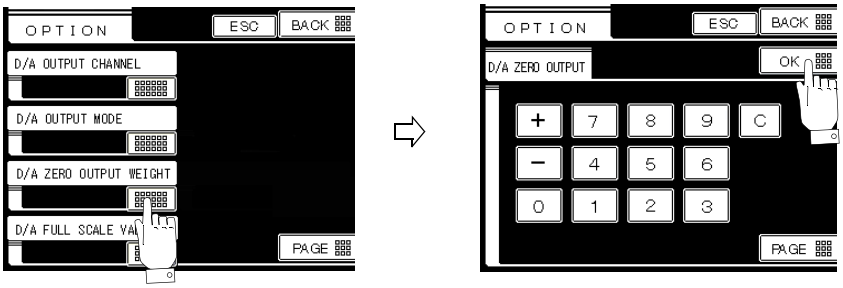
2) Press D/A OUTPUT CHANNEL ⌨ → Select channel → Press OK for the decision.



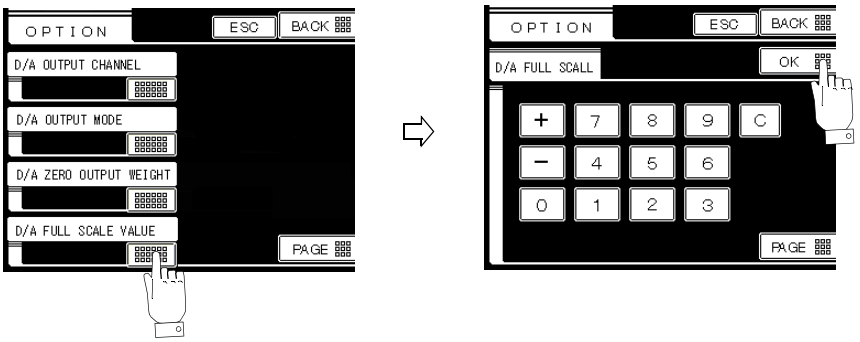
3) Press D/A OUTPUT MODE ⌨ → Select Output Mode → Press OK



4) Press D/A ZERO OUTPUT WEIGHT ⌨ → Enter Numbers by Ten-key → Press OK



5) Press D/A FULL SCALE VALUE ⌨ → Enter Numbers by Ten-key → Press OK.



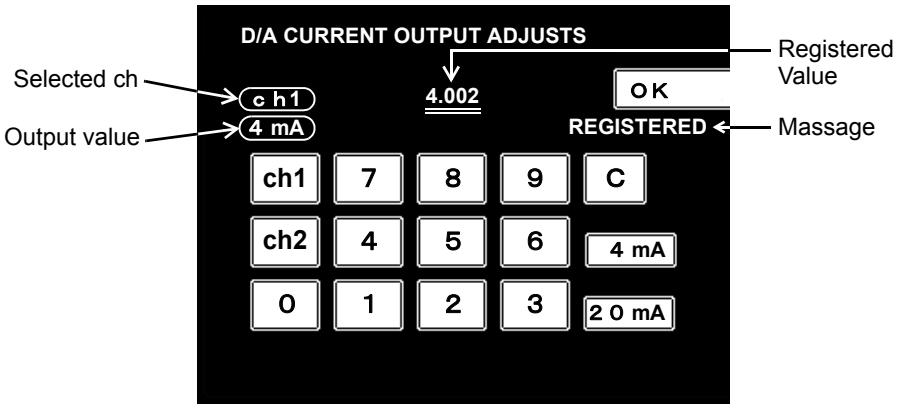
【Fine Adjustment of D/A Converter】

Fine adjustment of D/A converter output can be performed by digital registration.
When you adjust the output connect an ammeter to external equipment
(refer to "・Taking out Current output signal" on page 107).

・Entering the Pass word in Registration Display

MODE → PAGE → SYSTEM → PASS WORD →
Input 1269 → OK → PASS WORD → Input 1234 → OK

・D/A Zero・Gain Adjustment



(1) Zero (4mA) adjustment

- Select channel from ch1 or ch2.
- When 4 mA is pressed approx. 4mA of current will be outputted.
- Register the indicated value of the ammeter by pressing OK after entering it.
- Error of (registered value -4.000) ［mA］is adjusted automatically.
  When the adjustment is completed "REGISTERED" is displayed.

(2) Gain (20mA) adjustment

- Select channel from ch1 or ch2 .
- When 20 mA is pressed approx. 20mA of current will be outputted.
- Register the indicated value of the ammeter by pressing OK after entering it.
- Error of (registered value - 20.000) ［mA］ is adjusted automatically.
  When the adjustment is completed "REGISTERED" is displayed.

※ The output of Zero (4mA) may deviate from the standard after the Gain (20mA) adjustment completed. Check the output value by pressing 4 mA .
If the output deviated from the standard, do (1) procedure again.
Also check (2) then repeat (1) and (2) until the value is restored.

※ Display return to the main scream by AC power OFF → ON after registration completed.

Notice

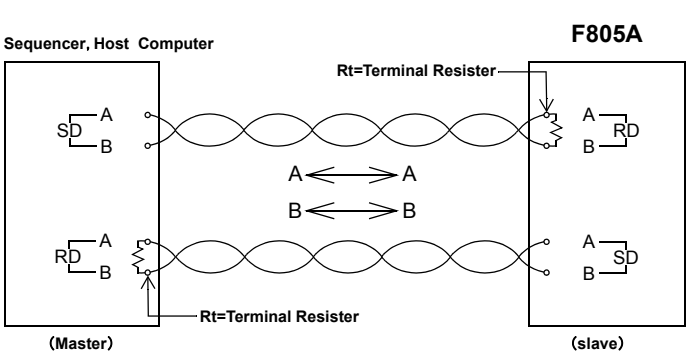
If the registration procedure was done mistakenly, the initial condition when it had been dispatched can not be restored.
When any equipment (ammeter etc.) is not available to confirm the current output values (4 ~20mA), do not execute fine adjustment of D/A converter.

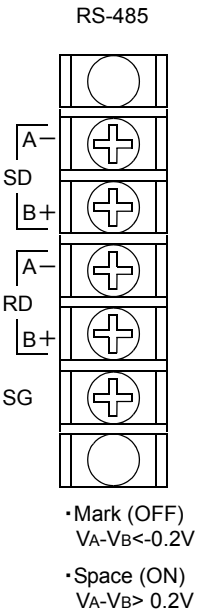
12-4. RS-485 Interface [(485) option]

12-4-1. Specifications

Standards	
Signal level	Based on the RS-485
Transmitting distance	approx. 1 km (1.094 yards)
Transmitting method	Asynchronous, fullduplex
Transmitting speed	1200, 2400, 4800, 9600, 19200bps selectable
Bit configuration	Start 1 bit
	Character length 7 or 8 selectable
	Stop 1 or 2 bits selectable
	Parity none, odd, or even selectable
Terminator	CR+LF or CR selectable
Code	ASCII

12-4-2. One to One connection

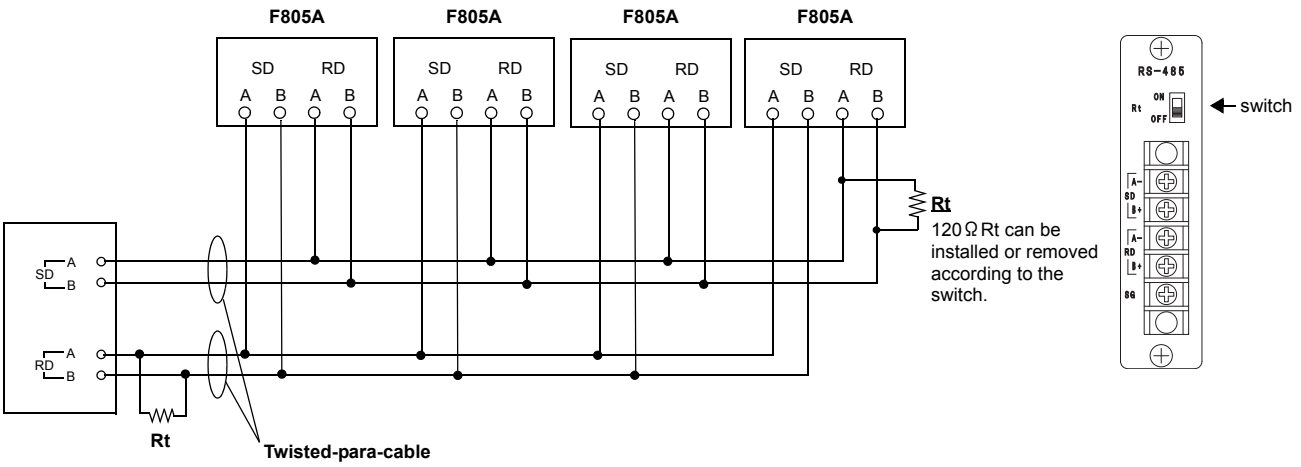




・Mark (OFF)
V_A-V_B<-0.2V
・Space (ON)
V_A-V_B> 0.2V

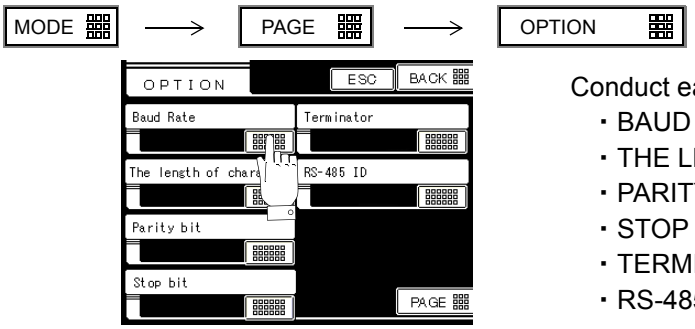
・Use a twisted pair cable for the connection. (Noise margin would be expanded.)
A twin wire cable is sufficient for the short distance connection.
・Install a terminal resister of 120 ohm level to the receiving side.

12-4-3. One to Multiple connection



12-4-4. Setting Value on RS-485

Conduct initial setting of RS-485 port for PC and Sequencer to be connected in accordance with the setting of F805A.



Conduct each setting.

- BAUD RATE
- THE LENGTH OF CHARACTER
- PARITY BIT
- STOP BIT
- TERMINATOR
- RS-485 ID

12-4-5. How to communicate

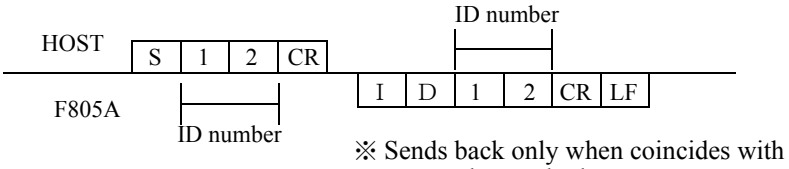
1. Set the ID number for each F805A (ID ≠ 0).
2. Send Start command including ID number. One F805A specified by master is now open to communicate. Reading out Weighing data, Setting data, Alternation, and Command become available.
3. Before getting communication with other F805A's possible, send stop command with ID number.

※ Since Tri-state control is performed by Start command and End command, if you only send Start command to multiple F805A's at the same time, normal communication is interfered due to the collision of output.

※ Do not use "0" as an ID number in a system with multiple F805A's. because communication is open at start up with ID number "0".

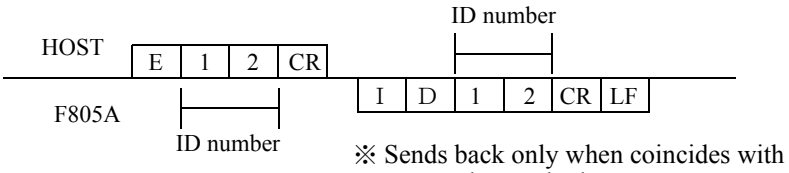
※ When ID number is not 00, other format (R.., W.., C.., etc.) are invalid until Start command below is received after power on.

4. Start command



※ Sends back only when coincides with ID number set by key.

5. End command



※ Sends back only when coincides with ID number set by key.

12-4-6. Communication format

Refer to RS-232C format please.

13. Error & Trouble Shooting

13-1. Error Message

(1) Over scale (Weight Error [Pin 46])

The input of A/D Converter overflowed	L O A D
Net weight ＞ Net Over set value	O F L 1
Gross weight ＞ Capacity ＋ 9 scale division	O F L 2
Gross weight ＞ Gross Over Set value	O F L 3

※ Net weight ＝ Gross weight － Tare

(2) Squence error (Error [Pin 47])

Error Item	Alarm Message	Alarm Number
When Start signal turns on, the Stop signal turns on.	**SEQ. ERR. 1**	**1**
During weigh cycle, the Stop signal turns on.	**SEQ. ERR. 2**	**2**
"Z.ALM"（Zero Alarm） turns on according to set AZ times.	**SEQ. ERR. 3**	**3**
During weigh cycle, Near Zero output signal turns off("At start, Near Zero confirmation ON" is selected for Sequence Control)	**SEQ. ERR. 4**	**4**
During weigh cycle, the value ≧ Set point 1 ※ "At start, Weight value confirmation ON " is selected for Sequence Control).	**SEQ. ERR. 5**	**5**
During weigh cycle, the Close Discharge Gate signal turns off (stops weighing).	**SEQ. ERR. 6**	**6**
During discharge, the Stop signal turns on. （stop discharge).	**SEQ. ERR. 7**	**7**
After Discharge output signal turns on, the Open Discharge Gate signal cannot turn on.	**SEQ. ERR. 8**	**8**
After Discharge output signal turns off, the Close Discharge Gate signal cannot turn on.	**SEQ. ERR. 9**	**9**

※ SP1 = Final － Set point1

(3) Calibration error

Error Item	Alarm Message	Alarm Number
Re-do Zero Calibration	**CAL.ERR.1**	**1**
The initial tare is beyond the zero adjustment range	**CAL.ERR.2**	**2**
The initial tare is minus	**CAL.ERR.3**	**3**
The input Balance weight is beyonde the Capacity	**CAL.ERR.4**	**4**
The Balance weight is 0 0 0 0 0	**CAL.ERR.5**	**5**
The loadcell output dose not reach the span adjustment range	**CAL.ERR.6**	**6**
The loadcell output is miunus	**CAL.ERR.7**	**7**
The loadcell output is beyond the span adjustment range	**CAL.ERR.8**	**8**
The weight value is not stable and Calibration stopped	**CAL.ERR.9**	**9**

(4) EXC ERR

When the voltage of sensing is too low, "EXC ERR" turns on.

Check the cable between instrument and load cell.

(5) Priority of ERR display

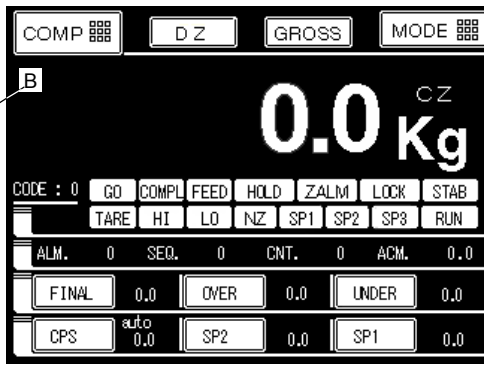
When prural ERR occured simultaneously, ERR are display following Order.

Priority	ERR. Over Scale
1	CAL.ERR
2	EXC ERR
3	− LOAD
4	LOAD
5	OFL2
6	OFL3
7	OFL1
8	SEQ. ERR

13-2. Trouble Shooting

● Short capacity of lithium battery

When the capacity of lithium battery is insufficient, Alarm (reversed display of red) turns on.



When B mark turns on as above, the capacity of lithium battery is insufficient. B mark indicates the ending of battery life.

When you turn F805A off after leaving it such condition for certain period of time the contents of setting may suddenly be lost.

In this case, the contents stored in NOV RAM are not lost. When B mark turns on, change the battery earlier. (The life of lithium battery is approximately 7 years in normal use.)

● Over-scale

ＬＯＡＤ（A/D converter over scale）

An input signal from the load cell exceeds F805A span adjustment range.

Check whether the output of the load cell is within span adjutment range;

Check there are breakages in the cable which is connected to the F805A and the load cell;

And whether the load cell connector on the rear panel is open or not, when the load cell connector is open（not connected with the load cell） will display LOAD also.

ＯＦＬ １（Net weight ＞ Net over set value）

Net weight exceeds the Net Over set value.

Decrease the signal coming from the load cell unitl the normal display returns.

Reset the Net Over Value ;

If the Net Over value is as the same as or within the value of the Capacity, OFL1 will not be displayed.

ＯＦＬ ２（Gross weight ＞ Capacity ＋ 9 scale division）

Gross weight exceeds Capacity ＋ 9 scale division.

Decrease the signal coming from the load cell until the normal display returns.

Notice

Scale Capacity is a primary data for the F805A. You must re-calibrate if capacity is changed .

DO NOT CHANGE CAPACITY TO RESET OVER SCALE MESSAGE.

ＯＦＬ３（Gross weight ＞ Gross over set value）

Decrease the signal coming from the load cell until the normal display returns.
Reset the Gross Over value；
If the Gross Over value is as the same as or within the value of the Capacity, OFL3 will not be displayed.

● Error display

SEQ. ERR.1（Sequence error）

When Start signal turns on, Stop signal turns on.
Turn OFF Stop signal then start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.2（Sequence error）

During weigh cycle, the Stop signal turns on.
Turn OFF Stop signal then start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.3（Sequence error）

"Z. ALM"（Zero Alarm）turns on according to set times.
Remove excess material causing alarm, set Digital Zero.
Turn OFF Stop signal then start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.4（Sequence error）

During weigh cycle, Near Zero output signal turns off（"At start, Near Zero confirmation ON" is selected for Sequence control）.
Confirm the Near Zero set value can compensate for excess material. Confirm the Start signal time period after discharge has finished.
Turn OFF stop signal then start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.5（Sequence error）

During weigh cycle, the value ≧ Set Point 1（"At start, Weight value confirmation ON" is selected for Sequence control）.
Confirm Set Point 1 and Final value. Confirm the Start signal time period after discharge has finished and verify Code No.
Turn OFF Stop signal then start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.6（Sequence error）

During weigh cycle, the Close Discharge Gate signal turns off（"Discharge Gate control ON" in Sequence mode）.
Turn on the close Discharge Gate signal;
Turn OFF stop signal then Start weighing; or enter the Compulsory Discharge Command.

SEQ. ERR.7（Sequence error）

During discharge, the Stop signal turns on (stops discharge).
Turn OFF Stop signal then start discharging; or enter the Compulsory Discharge Command.

SEQ. ERR.8（Sequence error）

After Discharge output signal turns on, the Open Discharge Gate signal cannot turn on.
（Discharging Time plus 2 seconds）
Turn ON the Open Discharge Gate signal; If "Discharging Gate Control（Near Zero confirmation ON）" is selected in Sequence mode remove excess material or change the set value, then turn ON the Open Discharge Gate signal.

SEQ. ERR.9（Sequence error）

After Discharge output signal turns off, the Close Discharge Gate signal cannot turn on.
（Discharging Time, plus 2 seconds）
Turn ON the Close Discharge Gate signal.

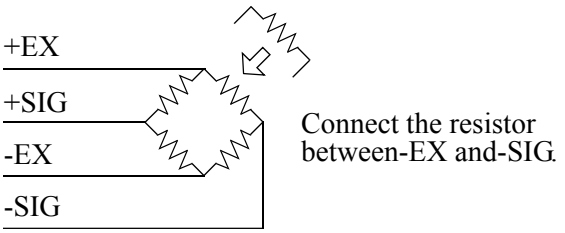
Refer to "Simple Comparison Control" on page 52 for more information.

CAL. ERR. 1（Calibration error）

Zero Calibration must be entered again.
Zero Calibration should always be done before Span Caibration. If CAL. ERR 1 appears after Span Calibration, Zero Calibration must be entered again.
After Zero Calibration CAL. ERR 1 will disappear.

CAL. ERR. 2（Calibration error）

Initial Dead Load is above Zero adjustment range.
Remove any excess load from loadcell or scale. If CAL.ERR.2 is still displayed, connect a resistor between+EX and -SIG. loadcell connections. This should shift the Zero point.
Do Zero Calibration again.

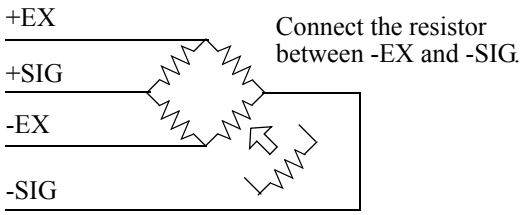


RESISTOR		STRAIN	
IDEAL	APPROX.	μ -STRAIN	mV/V
875 KΩ	866 KΩ	200	0.1
437 KΩ	442 KΩ	400	0.2
291 KΩ	294 KΩ	600	0.3
219 KΩ	221 KΩ	800	0.4
175 KΩ	174 KΩ	1000	0.5
146 KΩ	147 KΩ	1200	0.6
125 KΩ	124 KΩ	1400	0.7
109 KΩ	110 KΩ	1600	0.8
97 KΩ	97.6 KΩ	1800	0.9
87.3 KΩ	86.6 KΩ	2000	1.0
79.4 KΩ	78.7 KΩ	2200	1.1
72.7 KΩ	73.2 KΩ	2400	1.2
67.1 KΩ	66.5 KΩ	2600	1.3
62.3 KΩ	61.9 KΩ	2800	1.4
58.2 KΩ	57.6 KΩ	3000	1.5
54.5 KΩ	54.9 KΩ	3200	1.6
51.3 KΩ	51.1 KΩ	3400	1.7
48.4 KΩ	48.7 KΩ	3600	1.8
45.9 KΩ	46.4 KΩ	3800	1.9
43.6 KΩ	43.2 KΩ	4000	2.0
41.5 KΩ	41.2 KΩ	4200	2.1
39.6 KΩ	39.2 KΩ	4400	2.2
37.9 KΩ	38.3 KΩ	4600	2.3
36.3 KΩ	36.5 KΩ	4800	2.4
34.8 KΩ	34.8 KΩ	5000	2.5

- This table is for a 350 ohm loadcell.
  When 4 load cells are connected in parallel, the sensitivity decrease to 1/4. Be aware that the resistance also decreases to 1/4 accordingly.
- The temperature coefficient of the connected resistor directly influences the accuracy of the indicator. Use a resistor with a temperature coefficient below 50ppm.

CAL. ERR.3（Calibration error）

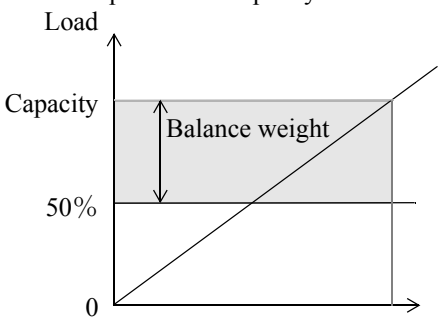
Indition Dead Load is negative.
Check that load cell is mounted in the correct direction; check that load is being applied to the load cell in the correct direction ;check that the +SIG. and -SIG. lines are propely connected.
If CAL. ERR.3 still displayed, connect a resistor between -EX and -SIG. load cell connections. This should shift the Zero point. Do Zero Calibration again.



CAL. ERR.4（Calibration error）

The Balance weight is larger than the Capacity.
Re-enter the Balance weight equal to or less than the Capacity. Do Span Calibration again.
Balance weight must be between 50% to 100% of Capacity in order to do Span Calibration correctly.

The relationship between Capacity and Balance weight



CAL. ERR. 5（Calibration error）

The set Balance weight is "00000". set adequate value to Balance weight.

CAL. ERR. 6（Calibration error）

The loadcell output dose not reach the Span range of the F805A.
Check how load is applied to loadcell; check loadcell has sufficient outpul（mV/V）to reach Span range. Do Span Calibration again.

The span adjustment range of F805A is between 0.3mV/V and 2.0mV/V.
Span Calibration is not Possible if load cell output is not within this range.

CAL. ERR. 7（Calibration error）

Load cell output is negative.
Check that load cell is mounted in the correct direction; check that load is being applied to the load cell in the correct direction; check that the +SIG. and -SIG. lines are propely connected.
Do Span Calibration again.

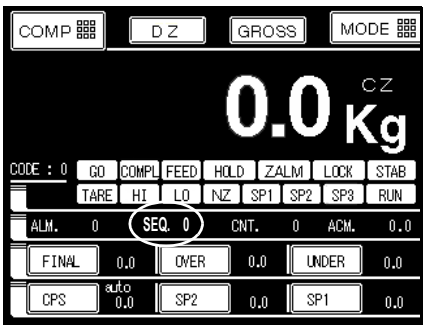
CAL. ERR. 8（Calibration error）

Load cell output is beyond Span adjustment range.
Check how load is applied to load cell; check load cell has sufficient output（mV/V）to reach Span range. Do Span Calibration again.

CAL. ERR. 9（Calibration error）

The Load is not stable enough for correct Calibration.
Adjust the Stable Period and Stable Range of Motion Detection so "STAB" display lights during Calibration. Do Calibration again.

14.The Sequential Status



There is a sequential status window “SEQ.” on Comparison screen.

From the displayed number will known the present situation of weighing systems. If there is anything happened could find out solutions to the problem. Especially, when the weighing sequence is stopped by unknown reason, look at the corresponded code in the flow chart will know the reason and to know how to settle it.

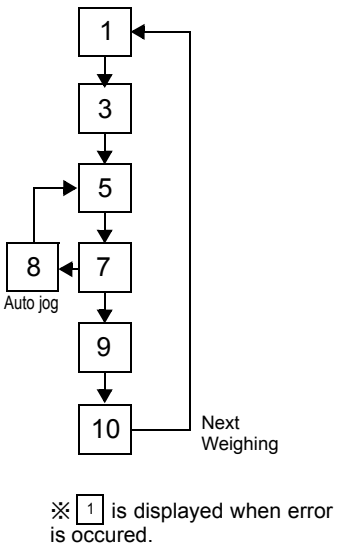
Basically, two are two types related to the way of discharge after weighing feeding sequence. You will find these code number in the window.

(1) Without discharge control
(2) With discharge gate control

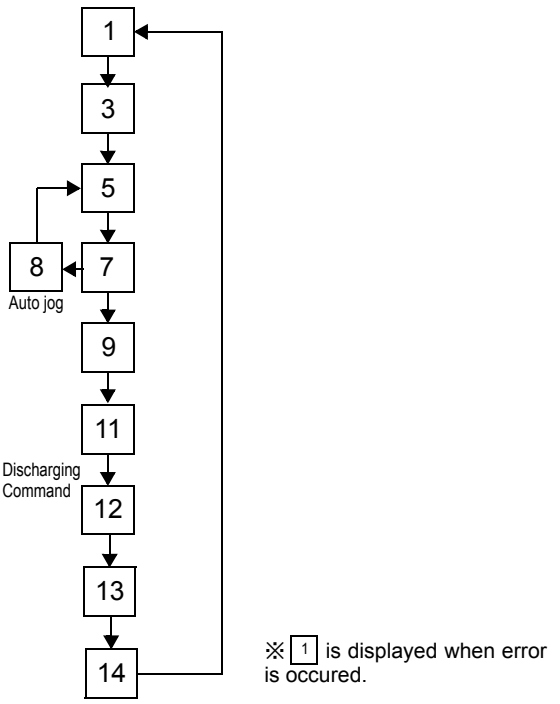
* Sequence Number is displayed in the square.
*When signal comparison mode is selected, the Number becomes “0”.

The detail of flow chart

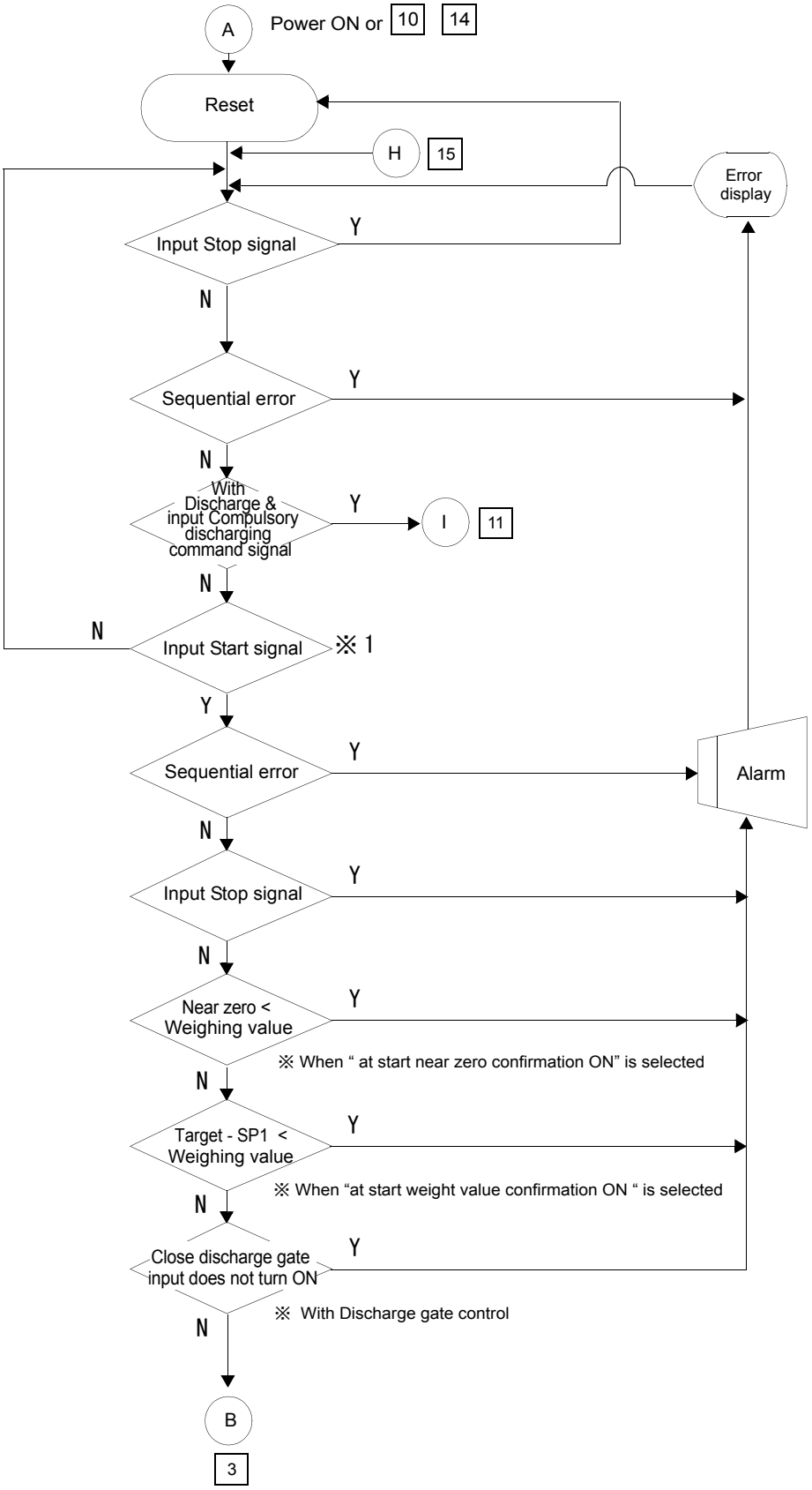
（1） Without discharge control



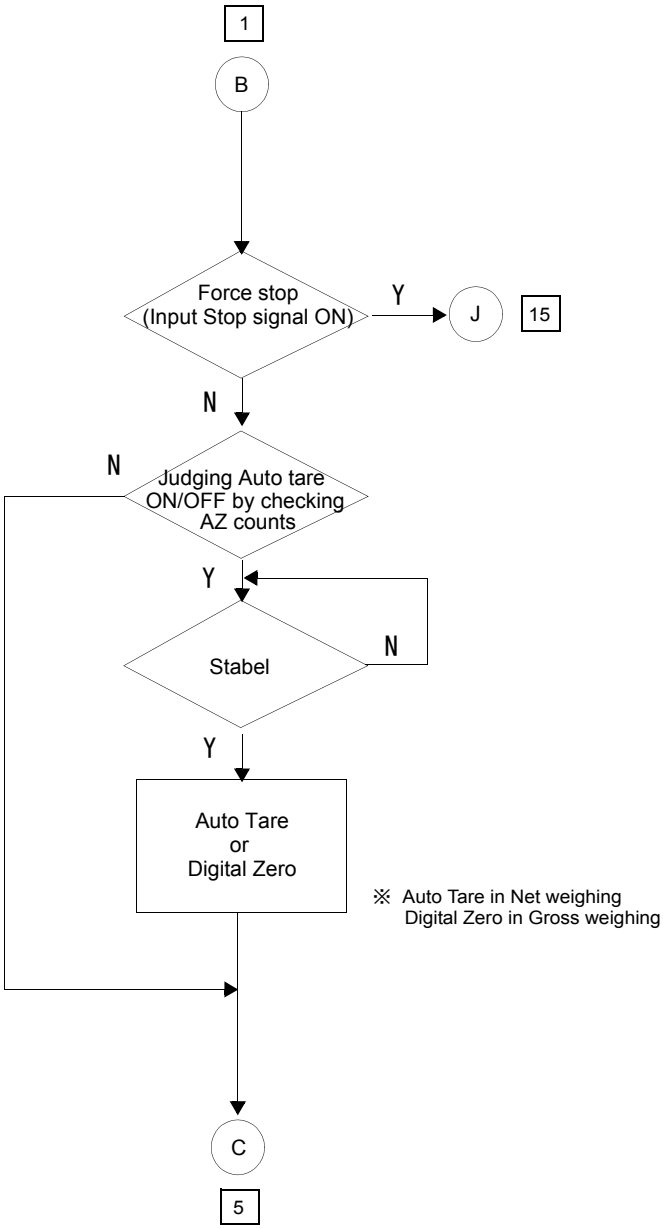
（2） With discharge gate control

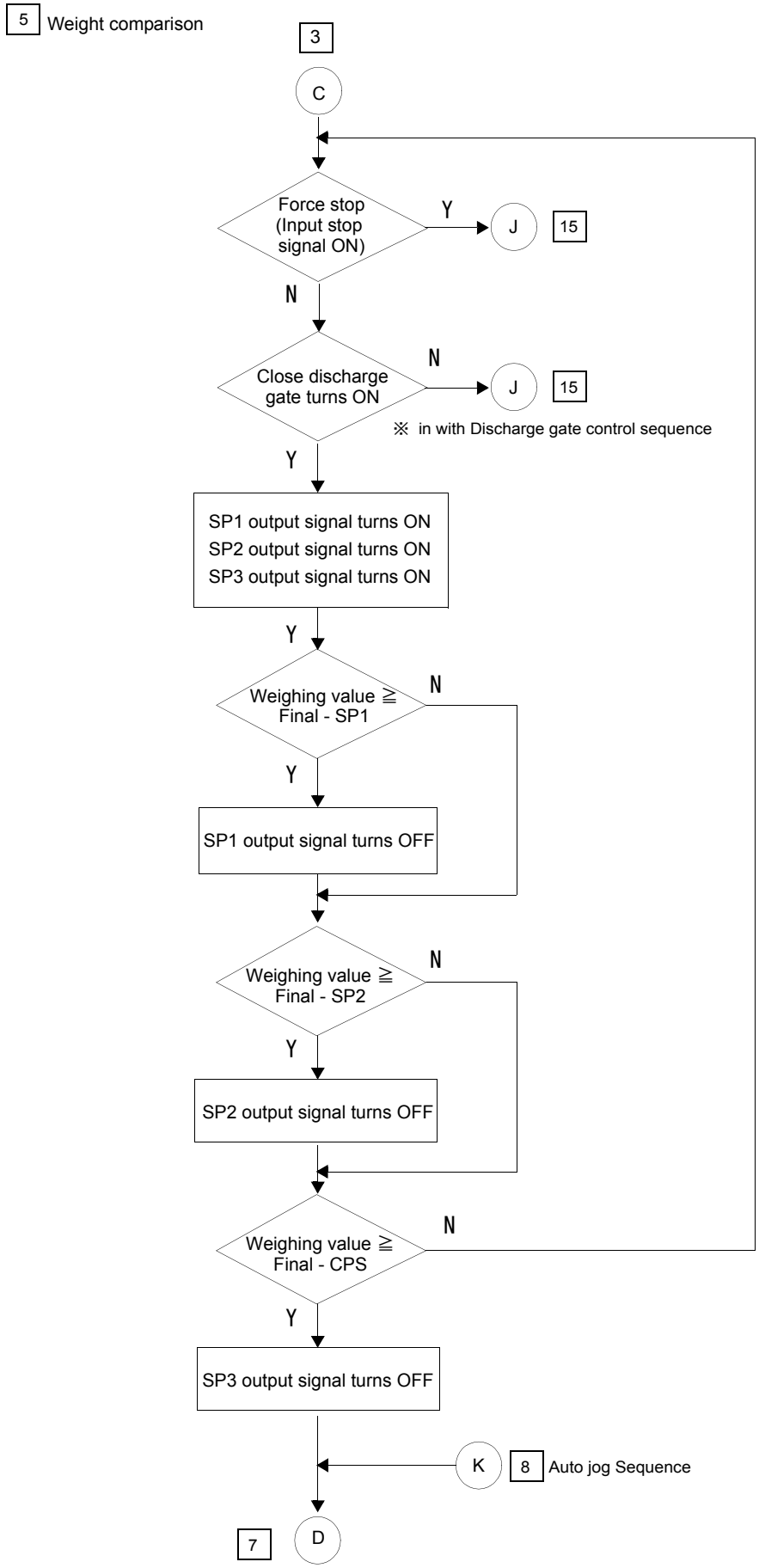


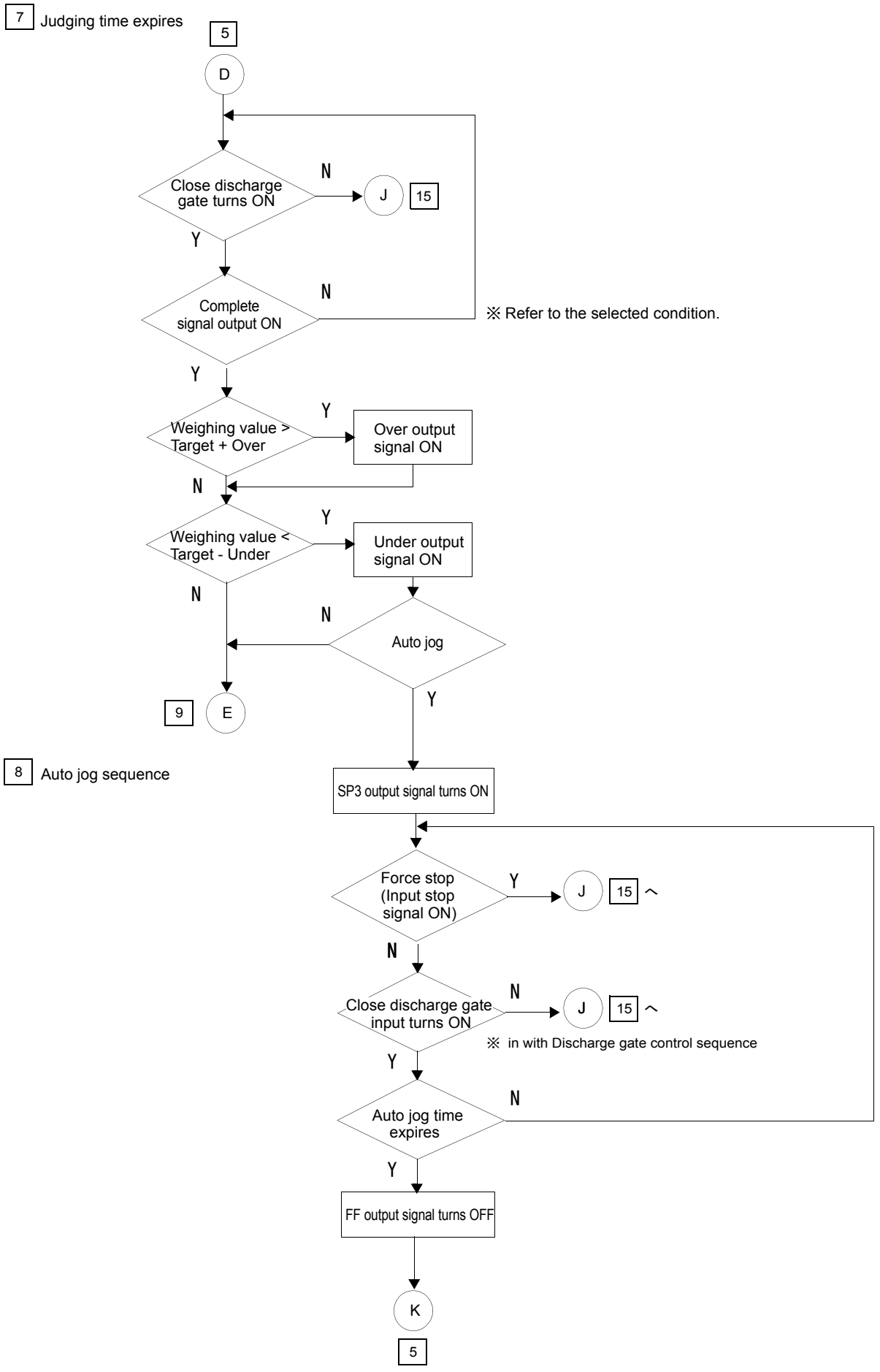
1 Standby for inputting Start signal



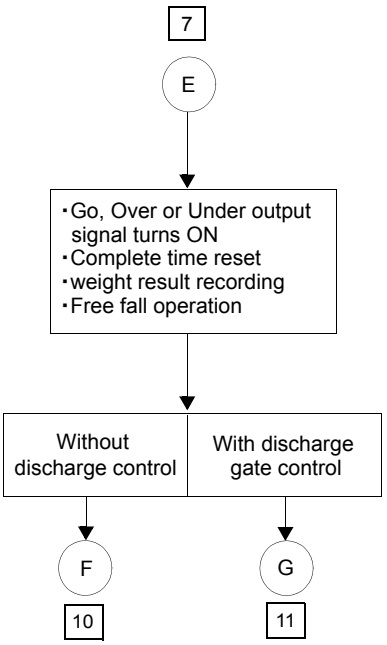
3 Weighing sequence



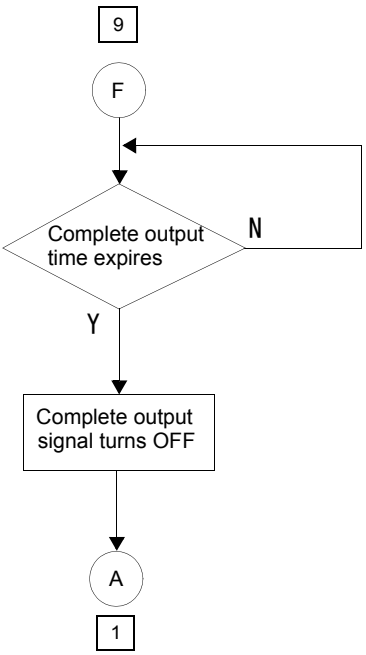

5 Weight comparison
3
C
Force stop (Input stop signal ON)
Y
J
15
N
Close discharge gate turns ON
N
J
15
※ in with Discharge gate control sequence
Y
SP1 output signal turns ON
SP2 output signal turns ON
SP3 output signal turns ON
Y
Weighing value ≧ Final - SP1
N
Y
SP1 output signal turns OFF
Weighing value ≧ Final - SP2
N
Y
SP2 output signal turns OFF
Weighing value ≧ Final - CPS
N
Y
SP3 output signal turns OFF
K
8
Auto jog Sequence
7
D


7 Judging time expires
5
D
Close discharge gate turns ON
N
J
15
Y
Complete signal output ON
N
※ Refer to the selected condition.
Y
Weighing value > Target + Over
Y
Over output signal ON
N
Weighing value < Target - Under
Y
Under output signal ON
N
N
Auto jog
9
E
Y
8 Auto jog sequence
SP3 output signal turns ON
Force stop (Input stop signal ON)
Y
J
15 へ
N
Close discharge gate input turns ON
N
J
15 へ
※ in with Discharge gate control sequence
Y
Auto jog time expires
N
Y
FF output signal turns OFF
K
5

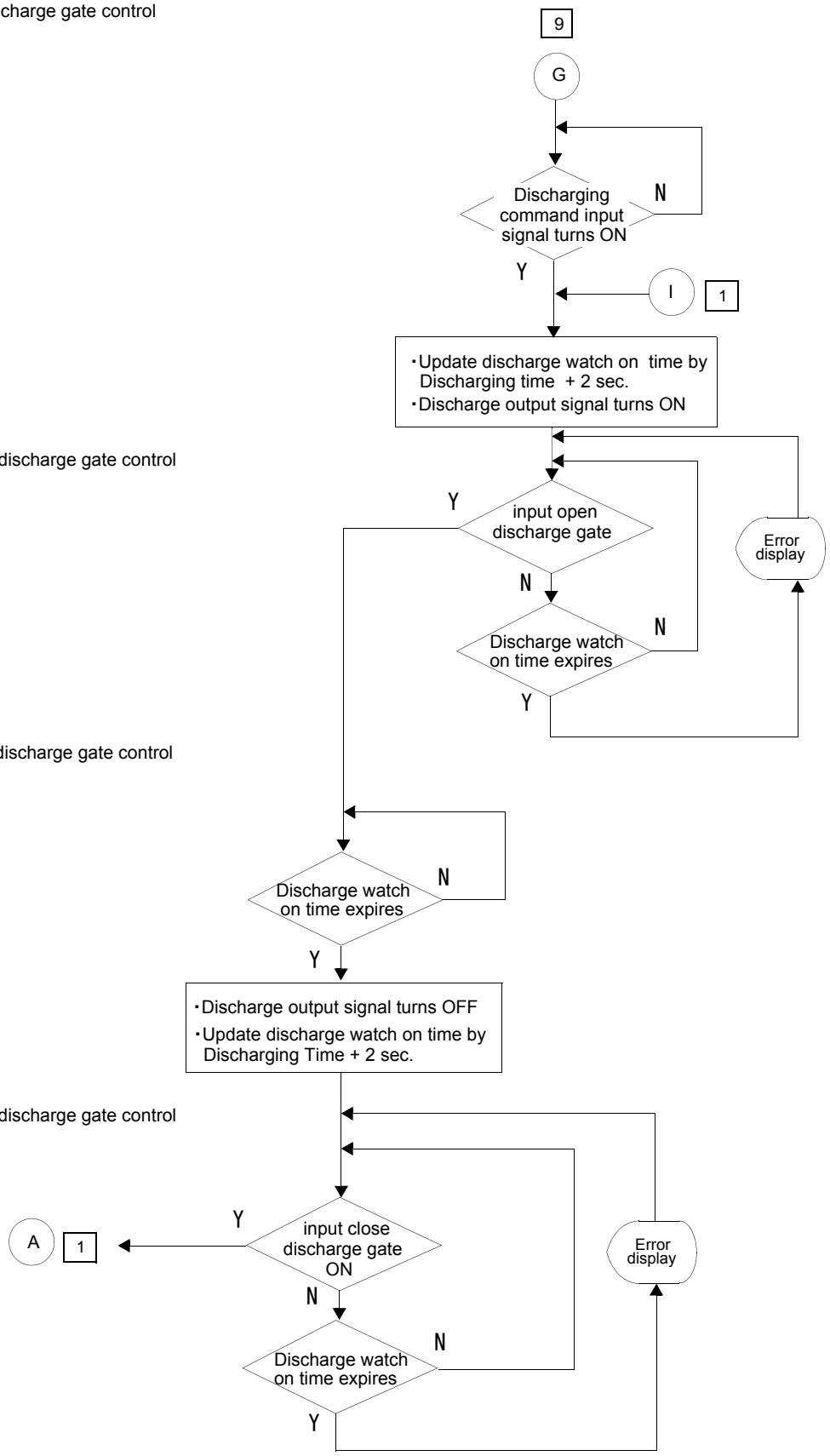
9 Judging discharge control



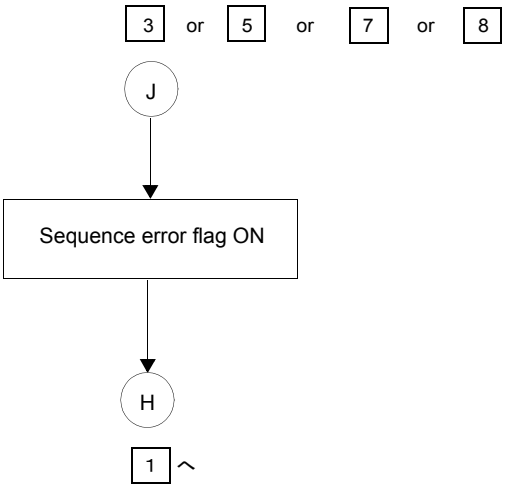
10 Weighing Complete



11 Squence 1 for discharge gate control

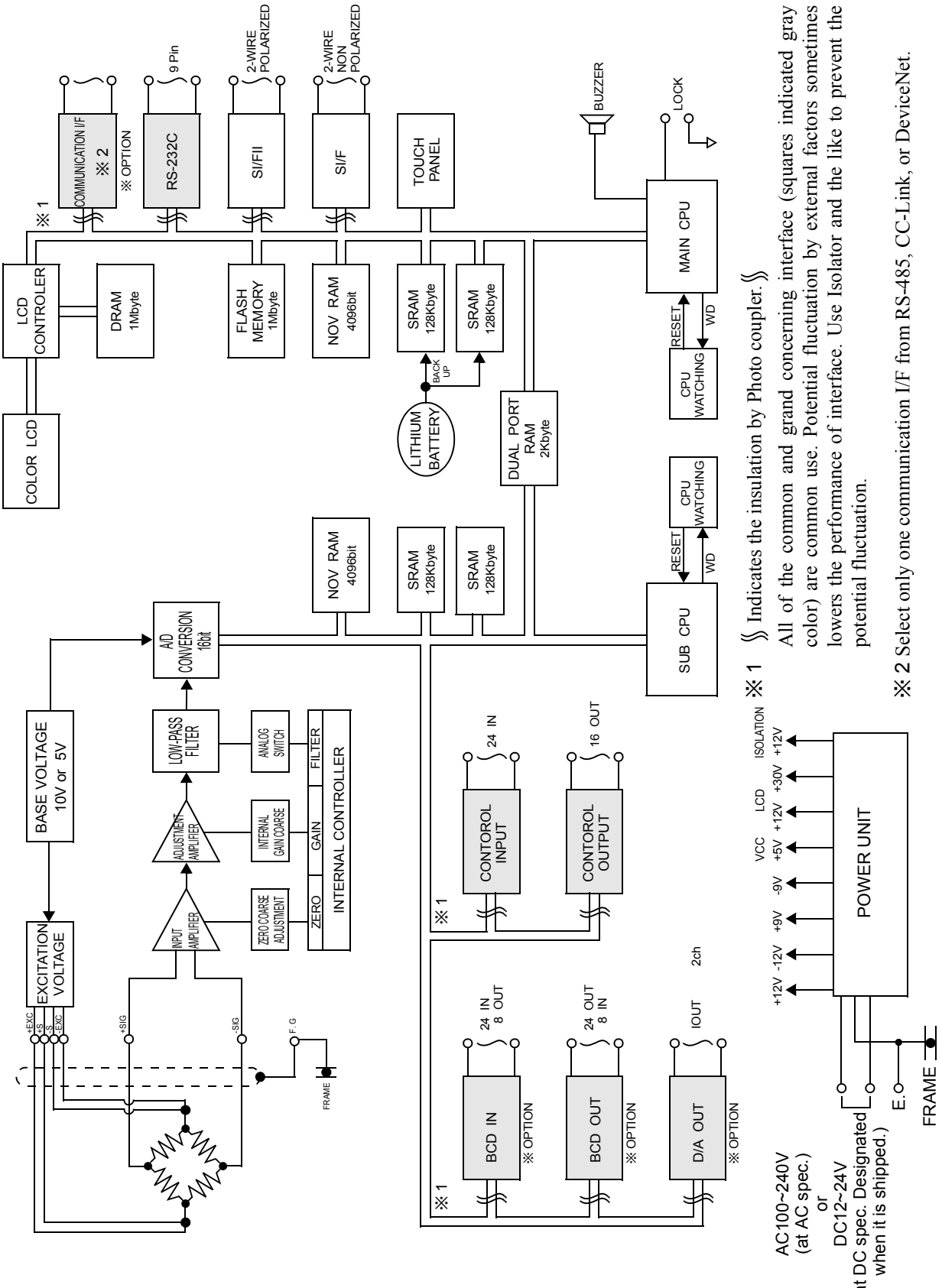


15 Error



15. Specification

15-1. Block Diagram

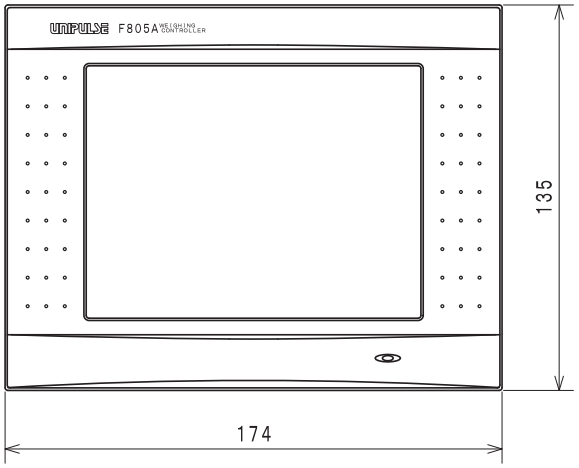


※ 1 ⟪ Indicates the insulation by Photo coupler. ⟫
All of the common and grand concerning interface (squares indicated gray color) are common use. Potential fluctuation by external factors sometimes lowers the performance of interface. Use Isolator and the like to prevent the potential fluctuation.

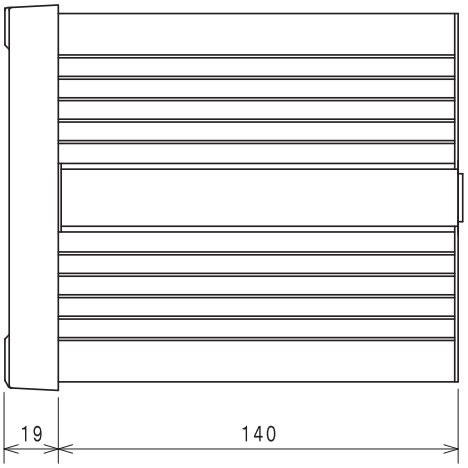
※ 2 Select only one communication I/F from RS-485, CC-Link, or DeviceNet.

15-2. Dimensions

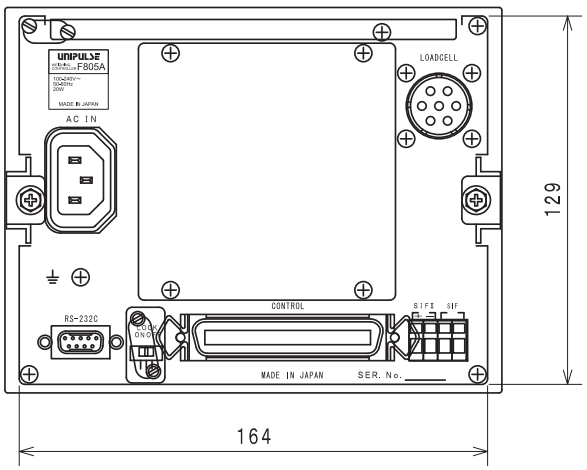
Unit: mm



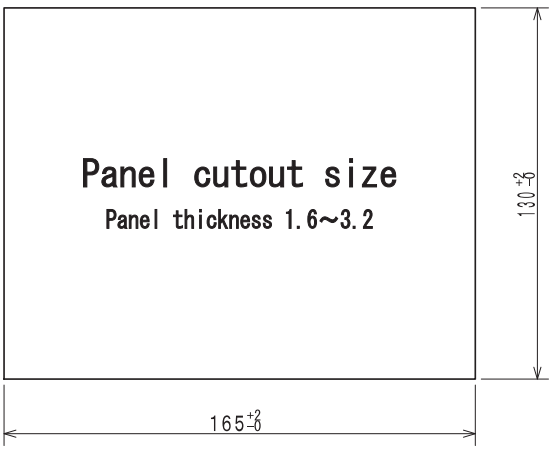
< Front >



< Side>



< Rear >

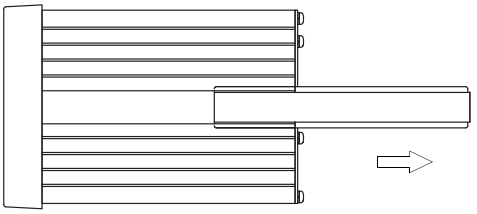


* Projections excluded

* Dimensions of F805A with AC spec. and with DC spec. are the same.

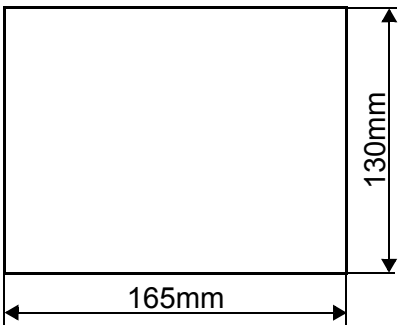
Please follow the procedure for F805A panel mounting.

1) Remove the rails of both side from F805A.

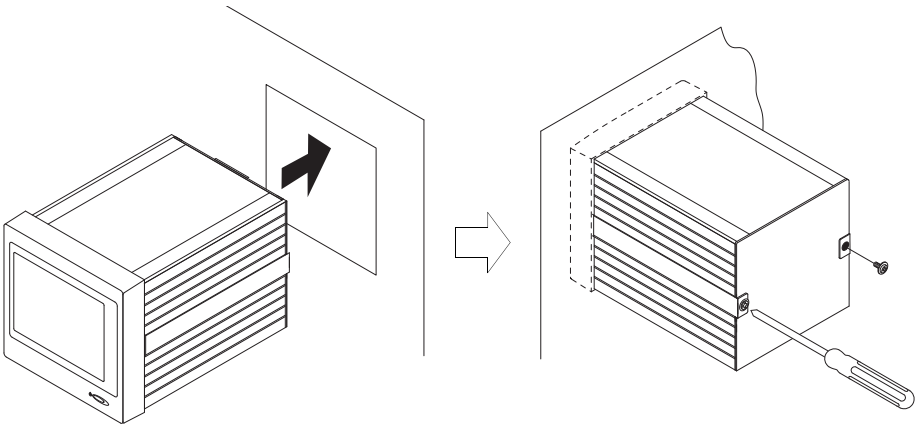


2) Drill holes following the panel cutout size.

panel cutout size
165W × 130H（mm）
panel thickness
1.6 ～ 3.2（mm）



3) Mount F805A, then fix it with the side rails.



15-3. Specifications

1. Analog

a. Load cell excitation	DC 10V+/-5% (enables to switchover from 5V to 10V)
b. Load cell current	120mA (4-350 ohm load cell, when excitation is 10V)
c. Load cell cabling	4-wire standard, 6-wire with remote sensing.
d. Zero adjustment range	0 to approx. 2mV/V
e. Span adjustment range	0.3 to 2.0mV/V
f. Analog input signal sensitivity	0.3 micron V/count (Legal for Trade) 0.075 micron V/count expanded
g. Non-linearity	Within 0.01%FS
h. Analog filter	Bessel type low-pass filter (-12dB/oct) 2, 4, 6, 8 Hz
i. Conversion rate	1000 times/ second (5ms) (enables to switchover from 200 times/second to 1000 times/second)
j. Display resolution	1/10000 (Legal for Trade) ,1/40000 expanded
l. Secondary calibration	Digital calibration (Registration of Reference value)

2. Display

a. Display	STN color LCD Display area : 117.2W × 88.4H［mm］ Dot structure : 320 × 240［dot］ Dot Pitch : 0.12W × 0.36H［mm］
Back-light	Brightness : Approx. 380 [cd/m^2] typical Durability : Approx. 75,000 [h] (25D. Celsius)
b. Weight value display	5 digits
c. Display update rate	Selectable 3, 6, 13, 25 times/sec.(internal 200 times/sec.)
d. Unit	Selectable g, kg, t, lb, N, none
e. Decimal point	Selectable 0, 0.0, 0.00, 0.000
f. Scale capacity	5 digit (up to 99999)
g. Min. scale division	1 ~ 100 selectable
h. Center zero	'CZ' turns on when the displayed value is at the center of zero (0 +/-1/4 scale).
i. Status display	Various weighing status are displayed.
j. Set value display	CODE/ FINAL/ SP1/ SP2/ CPS/ UNDER/ OVER
k. Accumulation display	Accumulating times 4 digits. Accumulating value 9 digits.

3. Configuration

a. Setting method	Analog type touch panel operation or set by a host computer through RS-232C.
b. Memory	Initial set values-NOV RAM (Non volatile RAM). Other set Values-C-MOS RAM backed up by a lithium battery.

4. Control INPUT / OUTPUT signal

a. External input signal (24)	Signals are inputted by shorting or opening Input and COM terminals.
b. External output signal (16)	Output signal circuit is an open-collector output of a transistor.

5. Interface

Standard equipment

a. 2-Wire serial interface (SI/F)

Connect Controller to Printers and Remote displays (up to 3 units).

Transmitting method : Asynchronous
Transmitting speed : 600bps

b. 2-Wire high speed bi-directional serial interface (SI/FII)

Connect Controller to Printer, Remote displays and Converters (up to 20 units or Indicator up to 4 units).

Transmitting distance : Approx. 300m
Transmitting speed : 300,000 bps

c. RS-232C Communication interface

Weight data, status and set values can be written or read by a host computer.

Signal level : Based on RS-232C
Transmitting distance : Approx. 15m (16.41 yards)
Transmitting method : Asynchronous
Transmitting speed : 1200, 2400, 4800, 9600 or 19200 selectable.
Bit configuration : Start 1bit
Character length 7 or 8bits selectable.
Stop 1 or 2bits selectable.
Parity none, odd or even selectable.
Code : ASCII

Option

OP1 : BCD parallel data output interface (BCO)

Transmits weight data to a PLC or other BCD devices.

Output signal : Weight data (5 digits), sign, over, strobe, printing command.
Output logic : Positive/ Negative selectable.
Output circuit : Open-collector (Vceo=30V max., Ic=50mA max.)
Input signal : Logic switching, hold, output data selection.
Input circuit : Operated by a contact or an open-collector circuit (Ic=10mA min.).

OP2 : BCD parallel data input interface (BCI)

Receives commands from a BCD device.

Input data : BCD data (5 digits)
Input mode : Level/ Edge selectable.
Input circuit : Operated by a contact or an open-collector circuit (Ic=10mA min.).

OP3 : D/A converter interface (DAC)

Weight data converted to an analog signal.

Current output	: 4 ~ 20mA
D/A conversion speed	: 1000 times/sec.
Resolution	: 16bit
Over range	: Full scale +/-10% Current 2.4 ~21.6mA

Serial communication interface option

OP4 : RS-485 Serial communication interface (485)

Addressable serial communication for connecting multi units.

Signal level	: RS-485
Transmission distance	: Approx. 1km (1,094 yards)

OP5 : CC-Link interface (CCL)

Links directly to Mitsubishi Control & Communication Link.

OP6 : DeviceNet interface (ODN)

Connects seamlessly to Allen-Bradley, Omron CompoBus/D which is based on DeviceNet.

(Up to 3 options and 1 serial communication interface option are available.)

6. General specifications

(AC spec.)

a. Voltage input	AC100V ~ 240V (+/-10%) Free power supply 50/60Hz.
b. Inrush current (Reference value)	15A, 5mSec : DC12V at the status of average load (room temperature, at cold start) 30A, 5mSec : DC24V at the status of average load (room temperature, at cold start)

(DC spec.: Designated when it is shipped.)

a. Voltage input	DC 12~24V (± 15%)
b. Inrush current (Reference value)	10A, 0.5mSec : DC12V at the status of average load (room temperature, at cold start) 35A, 0.4mSec : DC24V at the status of average load (room temperature, at cold start)

(The followings are the same for AC spec. and DC spec.)

c. Power consumption	Approx. 20W
d. Operating temperature	0 to +40D. Celsius (+32 to +104D.Fahrenheit)
e. Storage temperature	-20 to +60D. Celsius (-4 to +140D. Fahrenheit)
f. Humidity	<85% RH (non-condensation)
g. Dimension	174W x 159D x 135H (mm) (6.85 x 5.51 x 5.31 inch) Projections excluded.
h. Panel cutout size	165W ($^{+1}_{-0}$) × 130H ($^{+1}_{-0}$) (mm) (6.5 × 5.12 inch)
Panel thickness	1.6 ~ 3.2 (mm)
i. Weight Approx.	2.3 kg (5.07 pound)

7. Attachment

- Operation manual 1
- Power cable (2m[6.56ft], AC spec. only)..... 1
- Plug for power cable (AC spec. and CE marking only)..... 1
- Minus Screw driver 1
- Load cell connector 1
- Control signal input/output connector..... 1
- Ferrite core (CE marking only) 2
- BCD output connector (with BCD option)..... 1
- BCD input connector (with BCD option)..... 1
- Connector for D/A converter (with D/A converter option)..... 1
- Connector for CC-Link (with the CC-Link option) 1
- Connector for DeviceNet (with the DeviceNet option)..... 1

About the power cable

The power cable attached to this product as standard equipment can be used in the AC100V power supply in Japan. (Official ratings voltage AC125V)

Please use the power cable authorized in the country when you use this product outside Japan.

16. The List of Initial Setting Value Screen Display / Contents

Each code

MODE ⟶ EACH CODE

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Final	0.00	◎				
Over	0.00	◎				
Under	0.00	◎				
CPS	0.00	◎				
Set Point 2	0.00	◎				
Set Point 1	0.00	◎				
Auto Free Fall Compensation	10.00	◎			◎	
Comensation Feeding Time	1.00	◎			◎	
Accumlate clear	0.00	◎				Command
Total Comparison	COMP. OFF	◎				
Total Limit	0.00	◎				
Count Limit	0.00	◎				

Screen Display	Contents
CPS	Free Fall
SP2	Set Point 2
SP1	Set Point 1
AFFC	Auto Free Fall Compensation Regulation
CFT	Auto Jog
ACCUM.CLEAR	Accumulated Data Clear

Comparison

MODE → COMPARISON

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
U/L Limit Comparison 1	Gross weight		◎		◎	
U/L Limit Comparison 2	COMP. regularly		◎		◎	
Upper Limit	0.00kg				◎	
Lower Limit	0.00kg				◎	
Near Zero Comparison	Gross		◎		◎	
Near Zero	0.00kg				◎	
Over/Under Comparison 1	Gross weight		◎		◎	
Over/Under Comparison 2	COMP. regularly		◎		◎	
Complete Signal Output	Judging Time		◎		◎	
Complete Output Time	3.0 sec.		◎		◎	
Judging Time	1.5 sec		◎		◎	
Comparison Inhibit Time	0.50 sec		◎		◎	
Discharging Control Mode	Feeding		◎		◎	
Auto Free fall Compensation Coefficient	1		◎		◎	
Auto Free Fall Compensation	ON		◎		◎	
Average Count of Auto Free Fall Compensation	4 times		◎		◎	

Screen Display	Contents
U/L LIMIT COMPARISON 1	Upper/Lower Limit Comparison 1.
GROSS	Compare with Gross weight.
NET	Compare with Net weight.
COMPARISON OFF	Comparison OFF.
U/L LIMIT COMPARISON 2	Upper/Lower Limit Comparison 2.
COMP. REGULARLY	Compare regularly.
EXT. JUDGING ON	Compare when the external judging input is ON.
NEAR ZERO COMP.	Near Zero Comparison.
GROSS	Gross weight ≦ Near Zero
NET	Net weight ≦ Near Zero
COMPARISON OFF	Comparison OFF.
ABSOLUTE GROSS	| Gross | ≦ Near Zero
ABSOLUTE NET	| Net | ≦ Near Zero
OVER/UNDER COMP.1	Final, Over/Under Comparison 1.
GROSS	Compare with Gross weight.
NET	Compare with Net weight.
COMPARISON OFF	Comparison OFF.
OVER/UNDER COMP.2	Final, Over/Under Comparison 2.
COMP. REGULARLY	Compare regularly.
EXT. JUDGING ON	Compare when the external judging input is ON.
COMP. SIGNAL ON	Compare when the complete output signal is ON.

COMP. ON HOLD	Compare when the complete output signal is ON and the weight value is hold.
COMP. SIGNAL OUTPUT	Complete signal output.
JUDGING TIME	After judging time is expired, only during complete output time, complete signal output is ON.
JUDGE & STABLE	After judging time is expired and weight value becomes stable, only during complete output time, complete signal output is ON.
JUDGE/STABLE	After final or Over/Under signal turns on and judging time is expired or weight value becomes stable, only during complete output, complete signal output is ON.
COMP. OUTPUT TIME	The durance of complete rignal output.
JUDGING TIME	The durance of judging.
COMP. INHIBIT TIME	Comparison inhibit time.
DISCHG. CONTL. MODE	Discharging control mode selection.
FEEDING	Feeding weighing.
DISCHARGING	Discharging weighing.
EXTERNAL	Control I/O is ON discharging. Control I/O is OFF feeding.
CPS. COEFFICIENT	Free fall data update coefficient.
AFFC	Auto free fall compensation.
AFFC OFF	Without auto free fall compensation.
AFFC ON	Do auto free fall compensation.
AVG. COUNT OF AFFC	Average count of auto free fall compensation select between 1 to 9.

Operation

MODE ⟶ OPERATION

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Display Freguency	25times/sec.		◎		◎	
Digital Filter 1	16 times		◎		◎	
Analog Filter	6Hz		◎		◎	
Digital Filter 2	ON		◎		◎	
Motion Detection Mode	Stable Mode		◎		◎	
Motion Detection (period)	1.5 sec.		◎		◎	
Motion Detection (Range)	5 divisions		◎		◎	
Zero Tracking (period)	0.0 sec.		◎		◎	
Zero Tracking (Range)	0		◎		◎	
DZ Regutation Value	2.00kg		◎		◎	

Screen Display	Contents
DIGITAL FILTER 2	Software package use to quickly eliminate the effects of plant vibration on weighing systems, while yielding a stable weight reading.
ON	Valid
OFF	Invalid
DZ REGULATION VALUE	Digital Zero regulation value.

Sequence mode

MODE → SEQUENCE MODE

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Sequence Mode	Simple Comparison		◎		◎	
Judging Times	1 times		◎		◎	
AZ Times	1 times		◎		◎	
At Start NZ Confirmation	OFF		◎		◎	
At Start Weight value Confirmation	OFF		◎		◎	
Adjust Feeding	OFF		◎		◎	
Discharge Gate Control	OFF		◎		◎	
Discharging time	2.0 sec		◎		◎	
START/STOP Key	Invalid		◎		◎	

Screen Display	Contents
SEQUENCE MODE SIMP. COMP. MODE SEQUENCE MODE	Sequence mode. Simple comparison control. Sequence control.
AZ TIMES	The count for doing Auto Digital Zero.
AT START NZ CONF. OFF ON	At start, Near Zero confirmation (for sequence controlling).
AT START WV CONF.	At start, weight value confirmation.
DISCH. GATE CNTL	Discharge gate control.

Function

MODE → FUNCTION

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Preset Tare Weight 1	OFF		◎		◎	
Preset Tare Weight 2	0.00kg				◎	
TARE RESET	NO					Command
Auto Accumulation Command	ON		◎		◎	
Weighing Code Selection	Key Specify		◎		◎	
Setting Code Selection	Key Input		◎		◎	
Gross/Net Selection	Internal Key		◎		◎	
Discharge Control Mode	Sign ON		◎		◎	
TARE/DZ Key	Valid		◎		◎	
GROSS/NET Key	Valid		◎		◎	
Each code Key	Valid		◎		◎	

Screen Display	Contents
PRESET TARE WGT. 1	Preset Tare weight 1.
PRESET TARE WGT. 2	Preset Tare weight 2. The preset tare weight by user, and could not be cleared by operating Tare reset.
AUTO ACCUM. COMMAND	Auto accumulation command.
WEIGHING CODE SEL. KEY SPECIFY EXTERNAL INPUT SELECTION	Weighing code selection. Key specify via touch screen. Input signal via control I/O. Decide by the status of pin 33 of control I/O; OFF : Key specify ON : Via control I/O
SETTING CODE SEL. KEY SPECIFY EXTERNAL INPUT SELECTION	Setting code selection. Key specify via touch screen. Input signal via control I/O. Decide by the status of pin 33 of control I/O; OFF : Key specify ON : Via control I/O
GROSS/NET SEL. INT. KEY MODE EXT. INPUT MODE	Gross/Net selection. Internal key mode. (By key via touch screen) External input mode. (Inputting signal via control I/O)
DISCHG. CNTL MODE － SIGN ON － SIGN OFF	Discharging control sign. Net weight with minus sign. Net weight without minus sign. (in loss-in-weight application, shows gain-in-weight)

Extended function

MODE → EXTENDED

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Accumulation Command	Regularly		◎		◎	
One-Touch Tare Subtraction	Regularly		◎		◎	
Range of Tare Subtraction	Whole Range		◎		◎	
Tare Diplay	Inhibit		◎		◎	
Extended preset Tare Subtraction	Inhibit		◎		◎	
Over Scale	Blinking		◎		◎	

Screen Display	Contents
ACCUM. COMMAND	Accumulation command.
REGULARLY	Accept regularly.
IN STABLE MODE	Accept in stable.
ONE - TOUCH TARE SUB.	One - touch Tare subtraction.
REGULARLY	Accept regularly.
IN STABLE MODE	Accept in stable.
RANGE OF TARE SUB.	Range of Tare subtraction.
WHOLE RANGE	Whole range.
0 ＜ TARE ≦ CAPA.	0 ＜ TARE ≦ Capacity
TARE DISPLAY	Tare weight display.
INHIBIT	Invalid
TARE KEY ON	Hold Tare key, while displays tare subtracted weight.
EXT. PRESET TARE	When one-touch Tare subtraction is effective, digital preset Tare weight 1 ON/OFF is not swichable and preset Tare weight 2 is not changeable.
INHIBIT	NO
EFFECT	YES
OVER SCALE	Selection of the display when each error of LOAD, OFL, and EXC ERR occurs
BLINKING	Blinking
ERROR ONLY	Error only

Calibration

MODE ⟶ CALIBRATION

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Zero Calibration	0.00kg		◎	◎	◎	Command
Span Calibration	100.00kg		◎	◎	◎	Command
Balance Weight Value	100.00kg		◎	◎	◎	
Capacity	100.00kg		◎	◎	◎	
Minimum Scale Division	0.01		◎	◎	◎	
Equivalent Calibration	2.0000mV/V		◎	◎	◎	Command
Net Over	999.99kg		◎		◎	
Gross Over	999.99kg		◎		◎	
Decimal Place	0.00		◎	◎	◎	
Unit Display	kg		◎		◎	
1/4 Scale Division Display	ON		◎		◎	
Gravitational Acceleration	9		◎		◎	
Load cell Excitation	10V		◎	◎	◎	

Graph setting

MODE ⟶ GRAPH

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Graphic Mode	SINGLE		◎		◎	
Triger Level	0.00kg		◎		◎	
X End Point	10.0 sec.		◎		◎	
Y Start Point	0.00kg		◎		◎	
Y End Point	150.00kg		◎		◎	

Data

MODE ⟶ DATA

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Average Weight	0.00	◎				◎
Maximum Weight	0.00	◎				◎
Minimimu Weight	0.00	◎				◎
General Standard Deviation	0.00	◎				◎
Sample Standard Deviation	0.00	◎				◎
Count of Data	0	◎				◎
Latest Data	0.00	◎				◎
Max.-Min.	0.00	◎				◎

Communication

MODE ⟶ COMMUNICATION

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Baud Rate	9600bps		◎		◎	
The Length of Character	7bit		◎		◎	
Parity Bit	ODD		◎		◎	
Stop Bit	1bit		◎		◎	
Terminator	CR+LF		◎		◎	
SIFII ID	0		◎		◎	

System

MODE ⟶ PAGE ⟶ SYSTEM

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Contrast			◎			
Back Light ON	INHIBIT		◎		◎	
Back Light OFF	10 min.		◎		◎	
LOCK (soft)	OFF		◎			
Self Check	NO				◎	
System Speed	200 times/sec.		◎		◎	
Language	ENGLISH		◎		◎	
PassWord	0					

Option

RS-485

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
Baud Rate	9600bps		◎		◎	
The Length of Character	7bit		◎		◎	
Parity Bit	ODD		◎		◎	
Stop Bit	1bit		◎		◎	
Terminator	CR+LF		◎		◎	
RS-485 ID	0		◎		◎	

D/A Converter

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
D/A Output Channel	ch1		◎		◎	
D/AOutput Mode (ch1)	INTERLOCK(G)		◎		◎	
D/A Zero Output Weight (ch1)	0.00kg		◎		◎	
D/A Full Scale Value (ch1)	100.00kg		◎		◎	
D/A Output Mode (ch2)	INTERLOCK(G)		◎		◎	
D/A Zero Output Weight (ch2)	0.00kg		◎		◎	
D/A Full Scale Value (ch2)	100.00kg		◎		◎	

BCD Output

Function	Initial Value	Code	NOV. RAM	Lock (sw)	Lock (soft)	Display
BCD Data Update Rate	SYSTEM SPEED		◎		◎	

17. Statement of Conformation to EC Directives (Designated when it is shipped)

*** The following notice must be observed only CE marking.**

Unipulse F805A Weighing Controller conforms to The EC Directives (based on Council of the European Communities, and is allowed to affix CE mark on it.

* Lower Voltage Directives EN61010-1
* EMC Directives EN61326-1

(EN55011, EN61000-4-2, EN61000-4-3, EN61000-4-4
EN61000-4-5, EN61000-4-6, EN61000-4-8
EN61000-4-11, EN61000-3-2, EN61000-3-3)

The following notice must be observed when you install F805A unit.

1. Since F805A is defined as an open type (unit to be fixed or built-in), it must be fixed or bolted to frame or solid board securely.
2. The power cable attached to this product as standard equipment can be used in the AC100V power supply in Japan. (Official ratings voltage AC125V)
   Please use the power cable authorized in the country when you use this product outside Japan.
3. Use shielded cable for connection with components other than power supply, such as load cell, input/output signals and optional device.
4. Attach separate type ferrite core (supplied as standard item with the unit) on terminal box side of power supply cable and also on connecting cable to sensor.

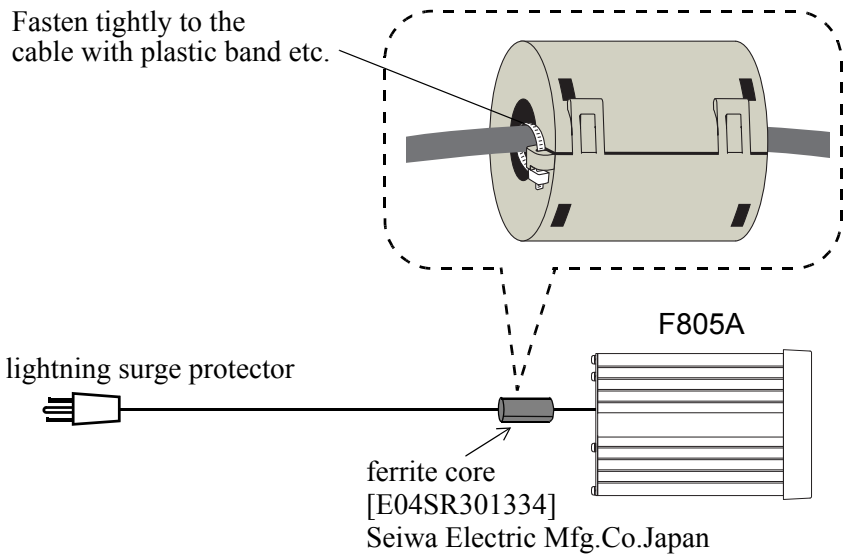
Note: ・Lightning surge protector is not included in standard supply for F805A.
・For installation of lightening surge protector, see next page.

Notice

Combined use of F805A and lightning surge protector conforms to EN61000-4-5 of EMC directives. (lightning surge immunity)

Attachment of a ferrite core (power source cable)

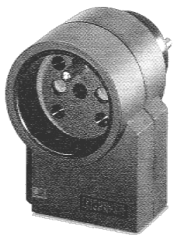
It is necessary to attach the ferrite core to the power source cable.



Connection of Lightning serge protect

The F805A main body conforms to EMC directive EN61000-4-5 (lightning surge immunity) in combination with the lightning surge protect.

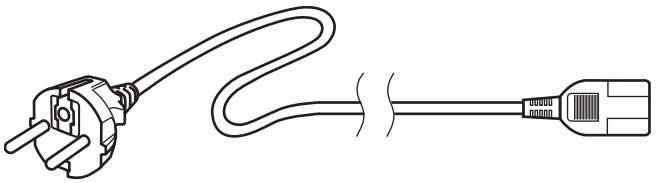
● **AC Spec.**



MAINTRAB MNT-ID
(option to F805A)

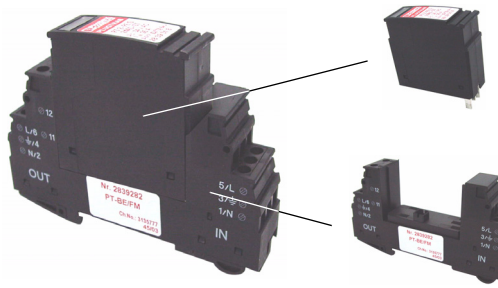
* “MAINTRAB MNT-1D” is trademark of Phoenix Contact, Germany

No lightning surge protector [MAINTRAB MNT-1D] is included as a standard. It is optionally available (TSU02) in combination with a 250V AC high-voltage cable in EU outlet form (See below: Standard product in Europe). For details, contact our sales department.



● DC Spec.

[Shape]



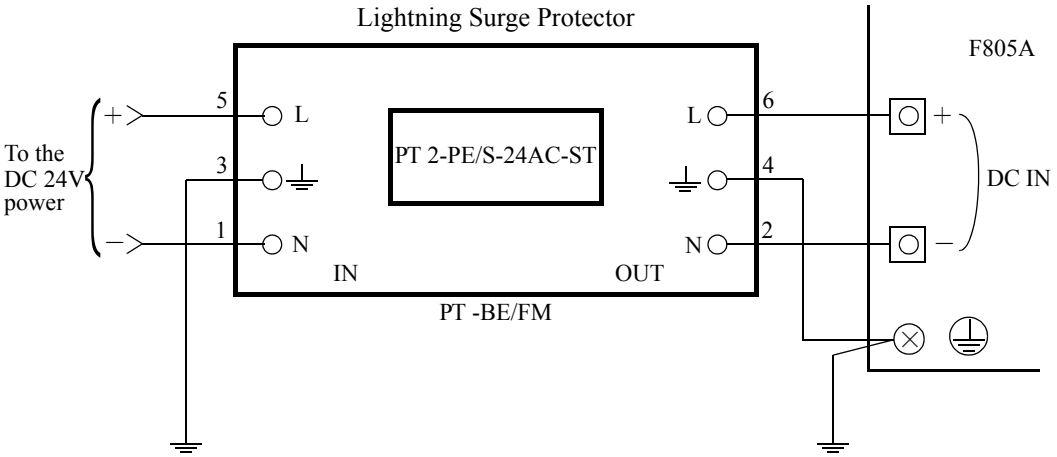
PT 2-PE/S-24AC-ST

PT-BE/FM
(DIN rail attached)

PT-BE/FM, PT 2-PE/S-24AC-ST
(option to F805A)

* "PT-BE/FM, PT 2-PE/S-24AC-ST" is trademark of Phoenix Contact, Germany

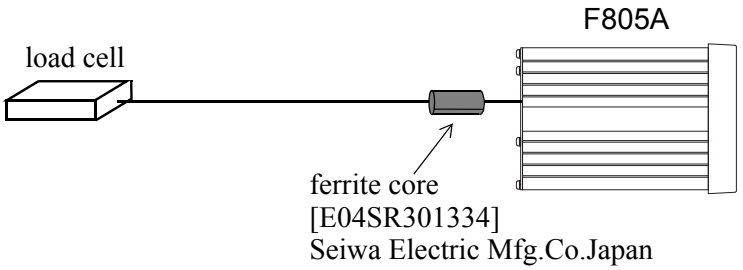
[Connect]



No lightning surge protector [PT-BE/FM, PT 2-PE/S-24AC-ST] is included as a standard. It is optionally available (TSU03). For details, contact our sales department.

Attachment of a ferrite core (sensor cable)

It is necessary to attach the ferrite core to the sensor cable.



※ Fasten tightly to the cable with plastic band etc.

M E M O

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