

A7-SG

User Manual



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SAFETY

-  Disconnect the main power supply before opening the indicator housing or disassembling the indicator.
-  Avoid using the indicator in direct sunlight. The operating ambient temperature range is $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
-  Connect the ground correctly. (Ground impedance $<100\Omega$) Avoid connecting the ground connection with other equipment. The indicator must always be connected to the electrical ground (earth) for safe operation.
-  Use 100V ~ 240V AC

CLEANNING TIPS

-  Please clean the indicator by alcohol and chemical medicament.
-  Please clean it with a wet cloth and gentle cleanser and dry it with a soft cloth.
-  Do not swash the indicator directly.
-  Do not breakout and maintain the indicator. If there is something wrong with the indicator, please contact with your supplier.
-  Keep away from high temperature 、 damp or direct sunlight conditions.
-  Do not shake the indicator fiercely.

Safety regulation

- Emission
EN61326-1 ClassA 、 EN55011 ClasssA 、 EN61000-3-2 、 EN61000-3-3
- Immunity
EN61326-1 、 EN61000-4-2 、 EN61000-4-2 、 EN61000-4-4 、 EN61000-4-5
EN61000-4-6 、 EN61000-4-8 、 EN61000-4-11

CHAPTER 1 MAIN CHARACTERISTIC

BUILT-IN 7 WEIGHT CONTROL MODES

Loading batch

Unloading batch

Check mode : HI,OK,LO

Normal batch (Built-in program)

Loss-in-weight (Built-in program)

Peak hold mode

30 CODE OF BATCH MEMORIES

THREE SECTIONS DISPLAY SYSTEM

First section- Indication of switching between Gross weight / Net Weight

Second section- Indication of checking gross weight Net weight Tare and batch set value

Third section- LED display indicates the current status of the indicator

MODBUS COMMUNICATION FORMAT MAY MEMORIES EACH PARAMETER VALUE.

SELECTION OF INTERFACE CARD

RTC

Control Input interface (8 Channel Input)

Control output interface (8 Channel Relay Output)

16Bit D/A interface (4 mode input 0~5V, 0~10V, 0~20mA, 4~20mA)

RS-485 series input/output interfaces

RS-232 series input/output interfaces

HIGH PRECISION HIGH PERFORMANCE A/D CONVERTER

24Bit A/D resolution

Minimum resolution: 0.12 μ V/1D input sensitivity

Wisdom digital filter: Sample frequency 6.25Hz ~ 100Hz

FLEXIBLE CALIBRATION PROCEDURES

2 point or multi-points calibration applicable

Various calibration points can be adjust independently.

RTC

Year / Month / Date Time / Minute / Second

WITH SELF-CHECKING FUNCTION, EASY TO MAINTENANCE THE SCENE

CHAPTER 2 SPECIFICATION

ANALOGue

- ◆ Load Cell Excitation Voltage: DC 5V $\pm 5\%$, 120mA (Up to eight 350 Ω load cell can be connected)
- ◆ Maximum signal voltage:-1mV~37mV
- ◆ Input sensitivity : 0.12 μ V/D (minimum)
- ◆ Conversion rate: Approximately 100 times/sec. (max.)
- ◆ Internal resolution: 24 bits

DIGITAL

- ◆ Main display: 7 Digits, Bright Red 7 segment LED display, Character height 0.8"
- ◆ Indication icon:12 Red display 3 Φ LED
- ◆ Unit indication:3 Red 3 Φ LED
- ◆ Display update rate : 50 times /sec.
- ◆ Display capacity : - 199999 to 999999
- ◆ Minimum division : 1 2 5 10 20 50
- ◆ Decimal point : 0 0.0 0.00 0.000 0.0000
- ◆ Memory : Calibration parameters and function settings saved in the EEPROM

OPTION

- ◆ RS-485
- ◆ RS-232C
- ◆ Analog output (0~5V 0~10V 0~20mA 4~20mA)
- ◆ Input Control (8Input)
- ◆ Relay Output (8Relay Output)
- ◆ RTC

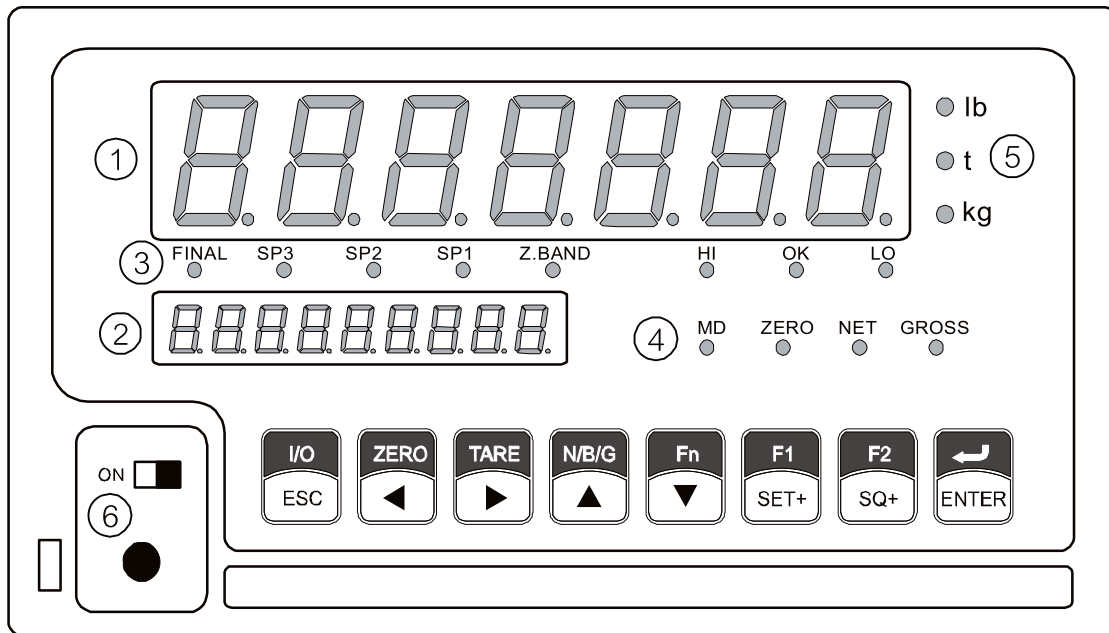
POWER SUPPLY

- ◆ Single-phase AC : 100V ~ 240V
- ◆ Power consumption : approximately 15 VA

OTHERS

- ◆ Operating temperature and humidity range: -10 $^{\circ}$ C ~ 40 $^{\circ}$ C , < 85% RH
- ◆ Dimension (mm) 210(W) $\times$ 108(H) $\times$ 148(D)
- ◆ Weight : approximately 1.7 kg

CHAPTER 3 FRONT PANEL



FRONT PANEL

1: MAIN DISPLAY SECTION

7 digits › bright red LED 0.8" display gross weight / new weight

2: SUB DISPLAY

9 segments › bright green LED 0.36", follow by FUNC-DSP2 setting › change display

3: BATCH LED INDICATION LIGHTS

FINAL : The final weight setting indication

SP3 : Set-point 3 of the material dropping section

SP2 : Set-point 2 of the material dropping section

SP1 : Set-point 1 of the material dropping section

Z.BAND : Batch value in the zero range

HI : High limit section

OK : Weight compare value between setting (HI, LO)

LO : Low limit section

4: INDICATION LED LIGHT

MD : Weight not stable indication.

ZERO : Gross weight is zero indication.

NET: Indication of net weight on the main display section.

GROSS: Indication of gross weight on the main display section.

5: WEIGHT UNITS LED INDICATION

6: WEIGHT PARAMETER AND CALIBRATION SETTING STATES

SWITCH " ON " WHEN THE SWITCH IS ON THE LEFT AND "OFF " WHEN THE SWITCH IS ON THE RIGHT

KEYS



ESC

- Power on / Standby model switching key
Under the normal mode, press 3 seconds, it enter to standby mode, all indications will enter to normal mode.
- When setting the parameter or under calibration mode, it works as

Escape.



ZERO

- Zero key
- When setting the parameter, it moves the blinking character one space to the left.



TARE

- Tare key
- When setting the parameter, it moves the blinking character one space to the right.



NET /GS

- Net weight / Gross weight switches key
- When setting the parameter, it adds “1” to the blinking number or selects the next item



Fn

- The function setting is follow by 4 (FUNCTION – 4)
- When setting the parameter, it works as subtract key



F1

- The function setting is follow by 3 (FUNCTION – 3)



F2

- The function setting is follow by 2 (FUNCTION – 2) (RECALL)



ENTER

- Confirmation key

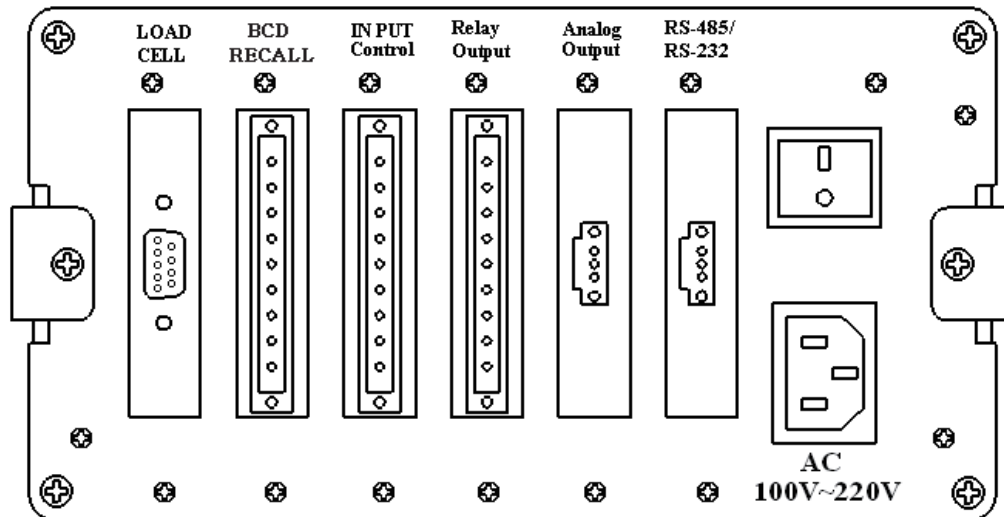
9: SPECIAL FUNCTION COMPLEX KEYS

- Press and hold the  key , then press the  key to enter to the function parameter setting mode.
- Press and hold the  key, then press the  key to enter to the batch parameter setting mode.
- Press and hold the  key, then press the  key to enter to the interface parameter setting mode.

9: SUB-INDICATOR FAST DEMONSTRATION SWITCHING KEY

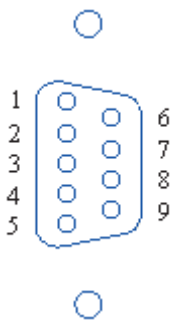
- Press and hold  key and then press the  key.
- When sub-display show accumulate weight, it work as(accumulated weight)(accumulated times) alternately.
- When sub-display show accumulate weight, it work as(batch value FINAL)(CODE) alternately.
- When sub-display show accumulate weight, it work as(Unit weight)(Quantities) alternately.

CHAPTER 3 REAR PANEL

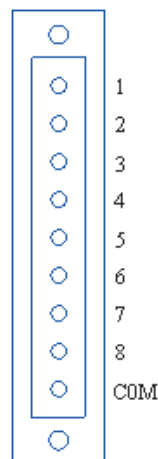


- Power supply AC100V ~ 240V
- Power switch : I (Open) / O (Close)
- Total can be connect 6 option cards

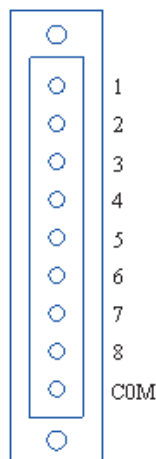
LOAD CELL-CARD



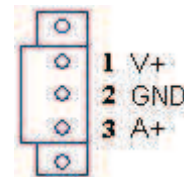
INPUT-CARD



OUTPUT-CARD



Analog-CARD



RS-485/232-CARD



1. LOAD CELL-CARD

- Pin 1 connected to EXC +
- Pin 2, 3 connected do not use
- Pin 4 connected to EXC -
- Pin 5 connected to SIG -
- Pin 6, 7, 8 connected to FG
- Pin 9 connected to SIG +

2. INPUT-CARD explanations

(Refer to 5-3. 2 Input function setting)

3. OUTPUT-CARD explanations

(Refer to 5-3. 3 Relay output function setting)

4. Analog-CARD explanations

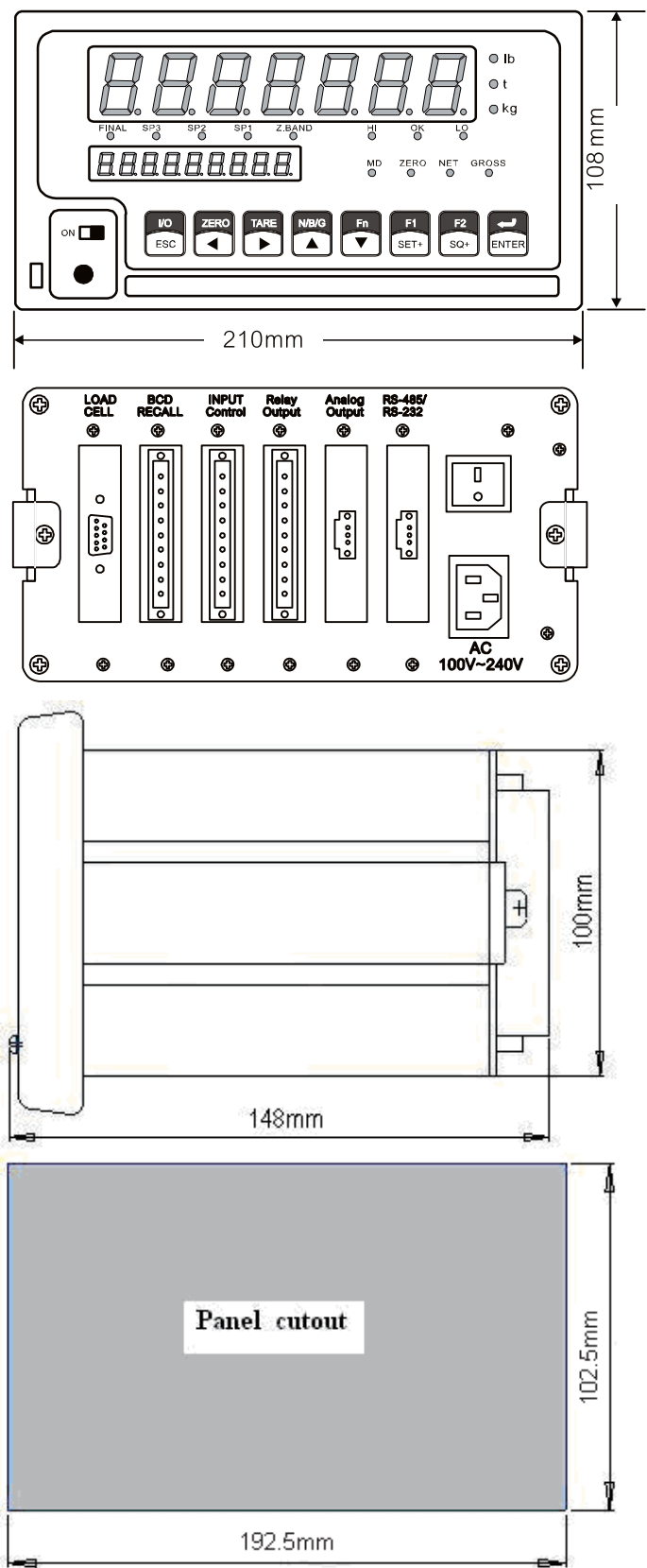
(Refer to 5-3. 4 Analog output function setting)

5. RS-485 / 232 –CARD explanations function setting)

(Refer to 5-3. 5 RS-485 / 232 communication protocol

CHAPTER 4 INDICATOR DIMENSION

4-1 INDICATOR DIMENSION

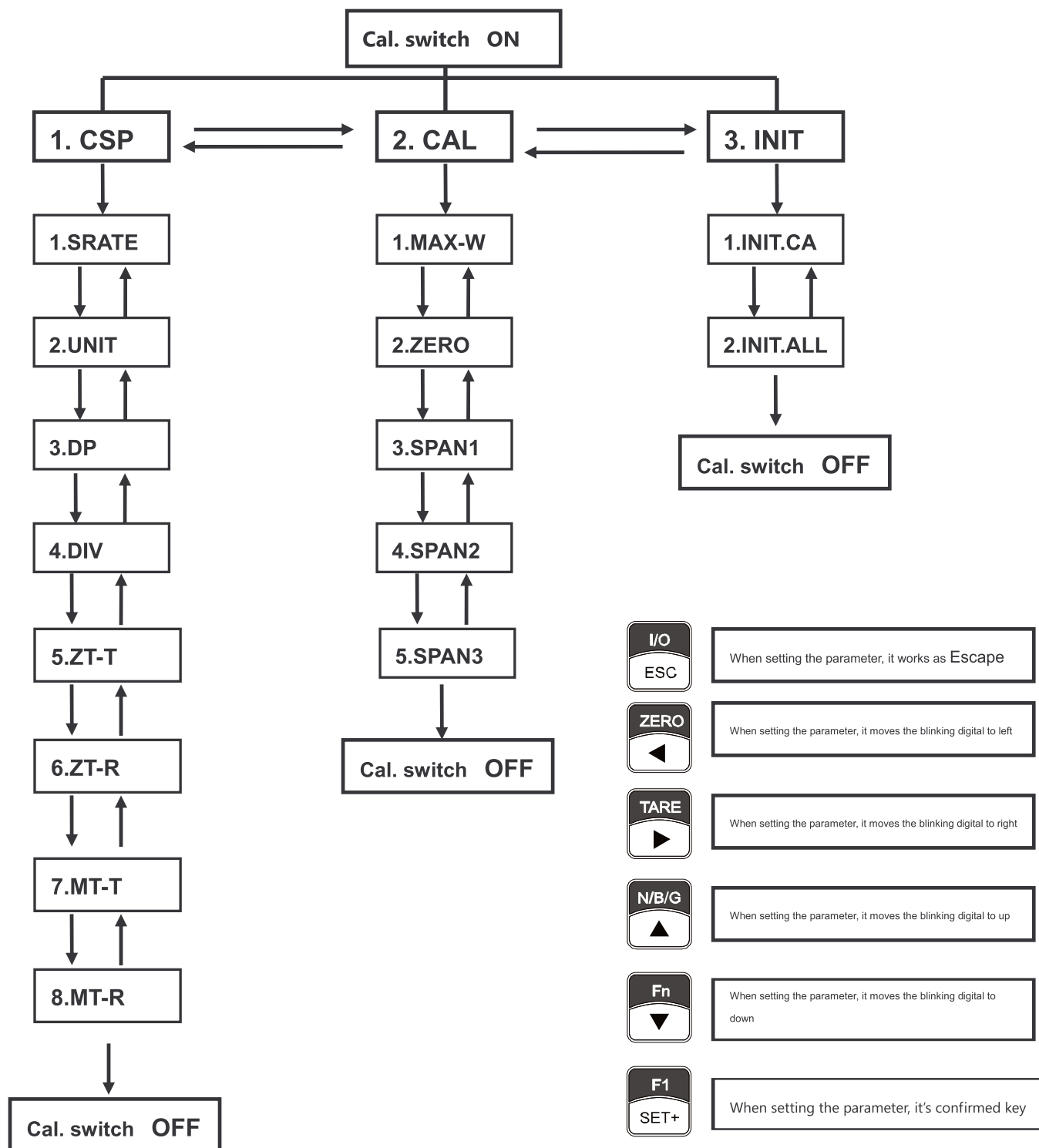


CHAPTER 5 FUNCTION SETTING

5-1 PARAMETER SETTING

Switch the capacity calibration switch to (ON) and the display shows, then enter to setting mode.

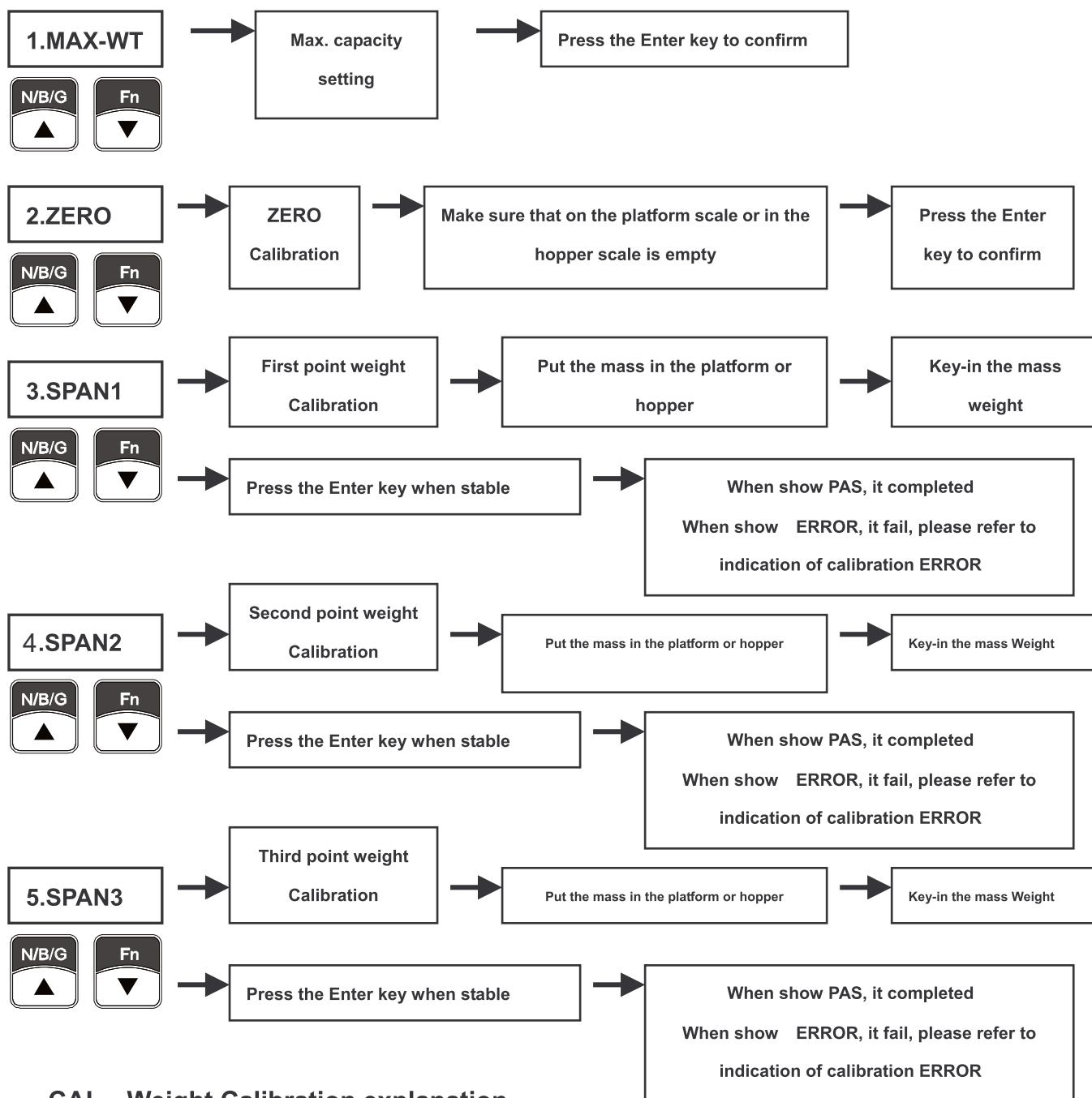
Switch the capacity calibration switch to (OFF), then quit from the setting mode.



Item	Function	Setting value explanation	Default value
1.SRATE	AD Sample Rate	0. 100Hz 1. 50Hz 2. 25Hz 3. 12.5Hz 4. 6.25Hz	25Hz
2.UNIT	Unit	0. kg 1. lb 2. t	Kg
3.DP	Decimal Point	0 0.0 0.00 0.000 0.0000 0.00000	0.000
4.DIV	Divide	0. 1 1. 2 2. 5 3. 10 4. 20 5. 50	1
5.ZT-T	Zero Track Time	00.0 ~10.0 sec.	1.0 Sec.
6.ZT-R	Zero Track Range	00.0 ~ 10.0 D	0.5D
7.MD-T	Motion Detect Time	00.0 ~10.0 sec.	1.0 Sec.
8.MD-R	Motion Detect Range	00.0 ~ 10.0 D	0.5D

5-1.2

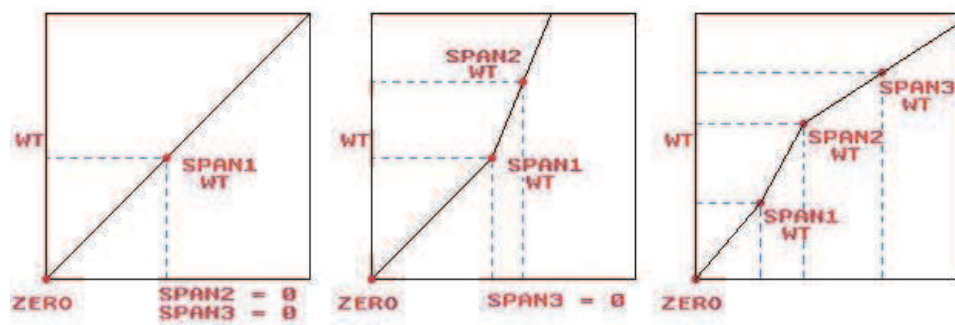
CAL Calibration parameter explanation



CAL Weight Calibration explanation

May depend on need to do two point calibration (ZERO,SPAN1) or multi-point calibration press the ESC key, it will cancel the calibration when you do the weight calibration

Please do the calibration (ZERO, SPAN 1..2..3) in order , calibration point must be SPAN3 > SPAN2 > SPAN1 > ZERO, When SPAN2 = 0, SPAN3 = 0, it cancel the calibration point.



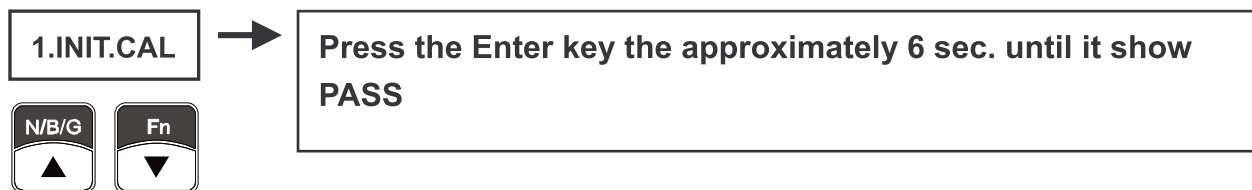
Calibration ERROR message

ERROR 2 The weight calibration set value is less than previous set point (For example:
Span1 < Zero, Or Span2 < Span1)

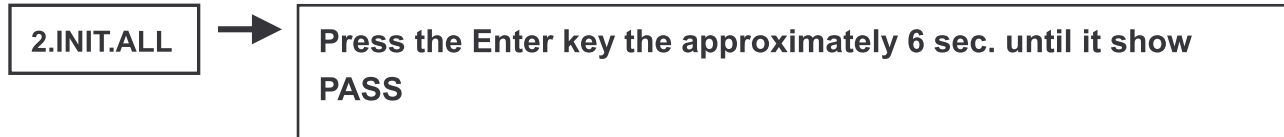
ERROR 3 Weight calibration set value higher than 0.07uV/V

5-1.3 INIT Restore back to factory standard set value

Function setting restore back to factory standard set value



Parameter setting restore back to factory standard set value



Explanation:

To choice the return option



Press key and do not released , until the indicator show PASS it's completed.

If released the key during the return procedure, it's cancel and the display will show FIAL.

5-2 Function parameter setting

Press the  key  & key , it enter to function parameter mode.

Press the  key, it escape the parameter setting mode.

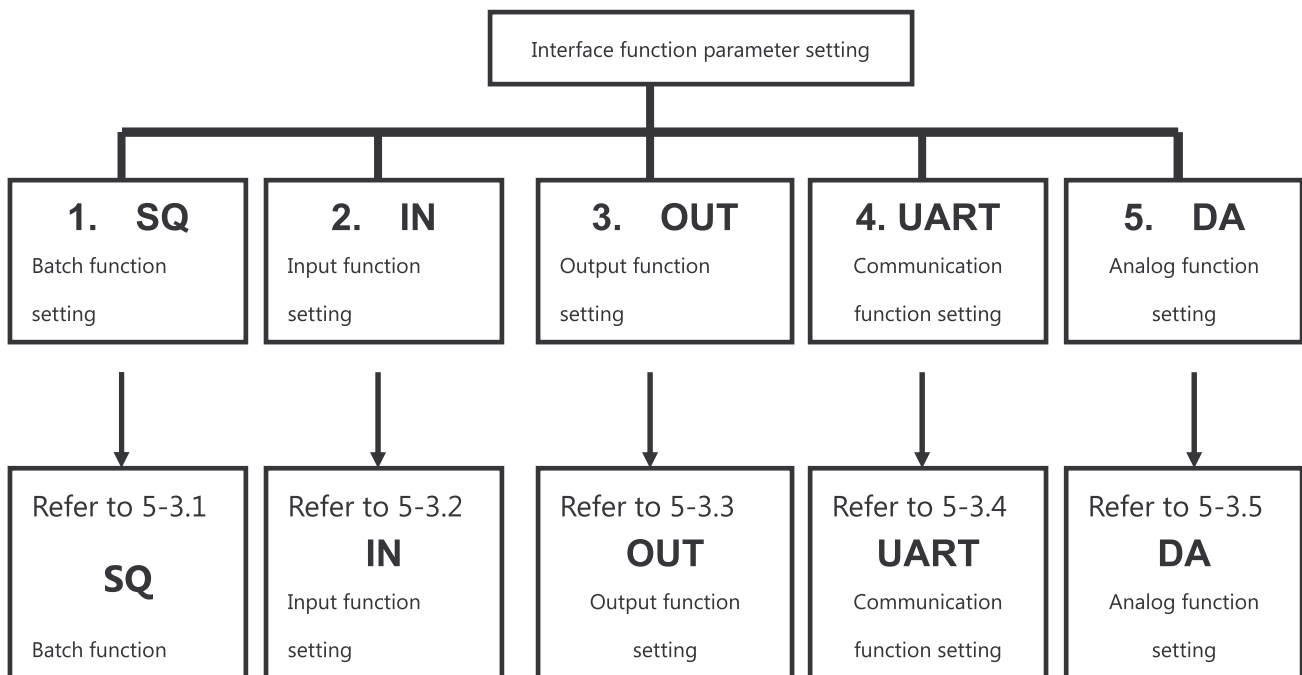
Attached 5-2 : FUNC function parameter setting explanation table

Item	Function	Setting value explanation		Default value
1.DSP2	Display 2 Sub-Indicator demonstration content	0. NO No display 1. Gross Gross weight 2. Net Net weight 3. Hold Hold value 4. Tare Tare 5. ACCU Accumulation times/Accumulation weight 6. FINAL Code / Batch completed value 7. COUNT Quantity / Unit Weight Note: When the setting value are 5.ACCU 6.FINAL 7.COUNT Press  key and  key , it can be switch the parameter		0. NO
2.F2 KEY	 F1 key function setting	0. NO No function 1. MA M+ Weight accumultion 2. M- M- Tare previous weight accumulate value 3. MC MC Clear the accumulate weight & times 4. CLR T Clear Tare 5. COUNT Count Number 6. START Batch Start 7. END Batch End 8. STOP Batch Stop 9. UN-LD Unload 10. JUDG Check Way Judgment 11.PRINT RS232 & RS485 12.CODE Code ReCall		12.CODE
3.F1 KEY	 SETPOINT key function setting			11.PRINT
4.Fn KEY	 F key function setting			4. CLR T
5.BZ SY	Buzzer setting	0. OFF Close 1. ON Turn on		
6.NUM SY	Code recall (RECALL)	0. ALL Interface & front panel to recall the code 1. BCD IN IN PUT BCD recall code 2. DSP The front panel recall the code		
11.DATE	Rtc Date	 Press  key it enter to the date setting		No
12.TIME	Rtc Time	 Press  key it enter to the time setting		No
13.TEST	Test Mode	0. DSP Display screen test 1. KEY Key test 2. ADC AD internal value test 3. UART Interface test 4. DA Analog test 5. IO IN Input test 6. IO OUT Output test 7. EEP Memory test 8.INIT F Restore the parameter function to the original setting value		No

5-3 INTERFACE PARAMETER SETTING

Press the  key and  key it enter to the function parameter setting mode.

press  key it escape the parameter setting mode



	Escape
	Shift the flashing digit one space to left
	Shift the flashing digit one space to right
	Shift the flashing digit one space to up
	Shift the flashing digit one space to down
	Confirmed

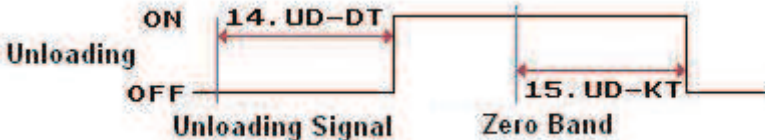
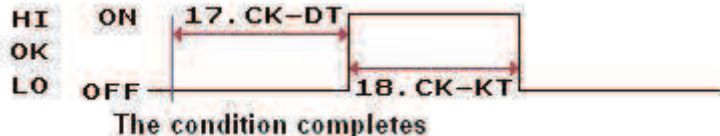
5-3. 1 SQ BATCH FUNCTION SETTING

Adjust the setting value by need, control the condition of built-in procedure
SQ/ MODE batch procedure flow chart, please refer to attache page33 and page34

Attach 5-3.1 : SQ Batch function parameter explanation table(1)

Item	Function	Setting explanation	Default value
Batch function control parameter section			
1.NUMBER	Number Batch procedure code	0 ~ 29	0
2.MODE	Mode	0. NO NO 1. PUT IN1 Normal batch 2. LOSE 1 Loss-in-weight 3. CHECK Normal check weight 4. PUT IN2 Normal batch (Built-in program) 5. LOSE 2 Loss-in-weigh (Built-in program) 6. PAKE Peak value keep batch (Built-in-program)	0. NO
3.BATCH	Batch Count	0 ~ 60000 times note : 0 = no limit times	1
4.ST-DT	Start Delay Time	0.0~ 25.0 sec	1.0 sec
5.AI-MA	Auto M+	0. NO none 1. AUTO Automatic accumulate	0. NO
Batch completed signal output control parameter section			
6.FH-CD	Finish Condition	0. NO Unconditional output 1. MD-OFF Waiting for the weight stable	1. MD-OFF
7.FH-DT	Finish Delay Time	0.0~ 25.0 sec	0.5 sec
8.FH-KT	Finish Keep Time	0.0~ 25.0 sec note: 0 = keep to next batch	1.0 sec
Batch Finish			
Compensate parameter control section			
9.CP-CH	Compensate Switch Channel	0. NO 1. SP1 2. SP2 3. SP3	3. SP3
10.CP-CT	Compensate Count	0 ~ 60000 times	0
11.CP-ON	Compensate On Time	0.0~ 25.0 sec	0.2 sec
12.CP-OFF	Compensate Off Time	0.0~ 25.0 sec	1.0 sec

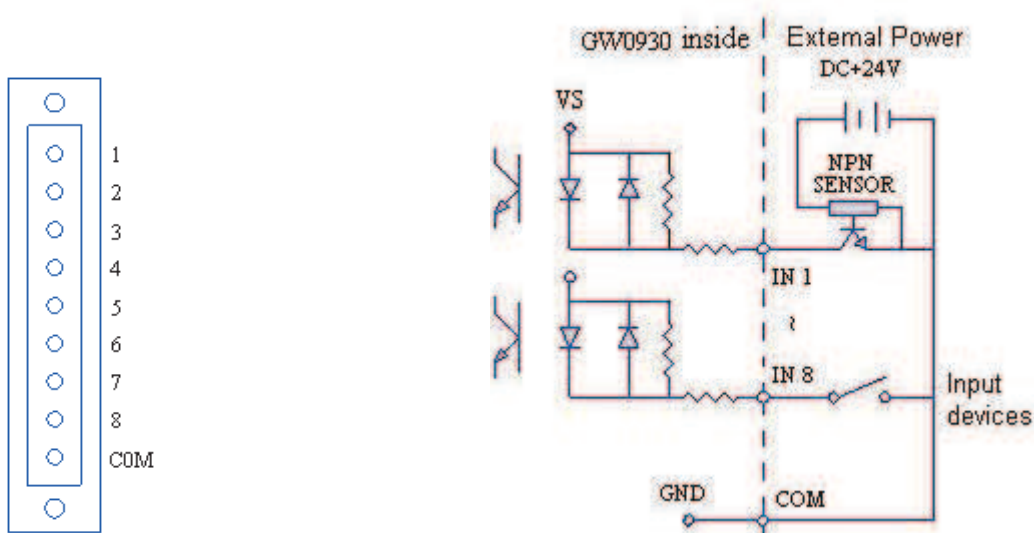
Attached 5-3.1 : SQ Batch function parameter explanation table (2)

Item	Function	Function setting explanation		Default value
Unload control parameter section				
13.UD-CD	Unload Condition	0. TOUCH 1. AUTO	Handmade loading Automatic loading	0.TOUCH
14.UD-DT	Unload Start Delay Time	0.0~ 25.0 sec		0.0 sec
15.UD-KT	Unload End Delay Time	0.0~ 25.0 sec		0.0 sec
				
Batching check weight control parameter section				
16.CK-CD	Check Way Compare Condition	0. NO 1. ALL 2. AUTO 3. FH-AI 4. JUDG 5. FH-JG	no Compare at any weighing moment Compare after the batching over Zero Band Compare after batching signal Compare after signal has touch off After batch signal completed + compare after signal has touch off	1.ALL
17.CK-DT	Check Way Out Delay Time	0.0~ 25.0 sec		0.0 sec
18.CK-KT	Check Way Out Keep Time	0.0~ 25.0 sec	note: 0 = keep to next batching	0 sec
				
Zero tracking parameter section				
19.ZBAND	Zero Band Range	0 ~ 9999999		0

5-3. 2 Input FUNCTION SETTING

Control working condition of input, it can be adjust INPUT setting by difference need

INPUT EQUIVALENT CIRCUIT



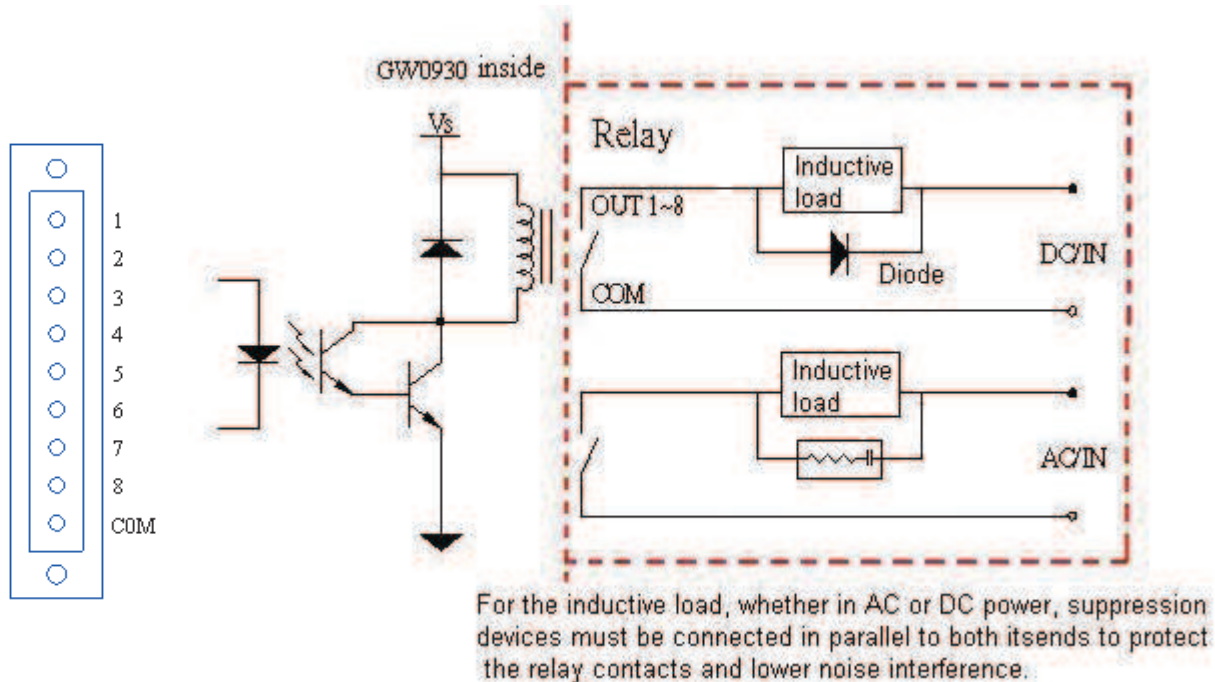
Attached 5-3.2 : INPUT parameter explanation table

Item	Function	Function setting explanation		Default value
1. IN-1	Input 1	0. NO	No	1. ZERO
2. IN-2	Input 2	1. ZERO	Zero	2. TARE
3. IN-3	Input 3	2. TARE	Tare	7. CLR T
4. IN-4	Input 4	3. NTGS	NT/GS	9. START
5. IN-5	Input 5	4. MA	M+	10. END
6. IN-6	Input 6	5. M-	M-	11. STOP
7. IN-7	Input 7	6. MC	MC	12. UN-LD
8. IN-8	Input 8	7. CLR T	Clear Tare	13. JUDG
9. LOGIC	Input Logic	8. COUNT	Get Count Number	
		9. START	Batch Start	
		10. END	Batch End	
		11. STOP	Batch Stop	
		12. UN-LD	Unload	
		13. JUDG	Check Way Compare Judgment	
		14.PRINT	RS232 & RS485	
		0. EQU	Equal	0. EQU
		1. OPP	Opposite	

5-3. 3 Relay output function setting

To control Relay output working status, it adjust Relay output setting by need

OUTPUT Equivalent circuit



Attached 5-3.3 : OUTPUT Parameter table

Item	Function	Function setting explanation		Default value
1. OUT-1	Output 1	0. NO	No	1. ZBAND
2. OUT-2	Output 2	1. ZBAND	Zero Band	5. SP1
3. OUT-3	Output 3	2. HI	High –Weight over batch setting value (HI)	6. SP2
4. OUT-4	Output 4	3. OK	Weight between batch setting value (HI LO)	7. SP3
5. OUT-5	Output 5	4. LO	Low-Weight less than batch setting value (LO)	10. FINAL
6. OUT-6	Output 6	5. SP1	Weight less than batch setting value (SP1)	8. UN-LD
7. OUT-7	Output 7	6. SP2	Weight less than batch setting value (SP2)	9. RING
8. OUT-8	Output 8	7. SP3	Weight less than batch setting value (SP3)	11. OL
		8. UN-LD	Unload	
		9. RING	Running –Built-in Program batching	
		10. FINAL	Batch completed	
		11. OL	Over load	
		12. UART	The output control by communication	
9. LOGIC	Output Logic	0. EQU	Equal When ON, the RELAY connection short	0. EQU
		1. OPP	Opposite When ON, the RELAY connection open	

5-3. 4 Analog output Function setting

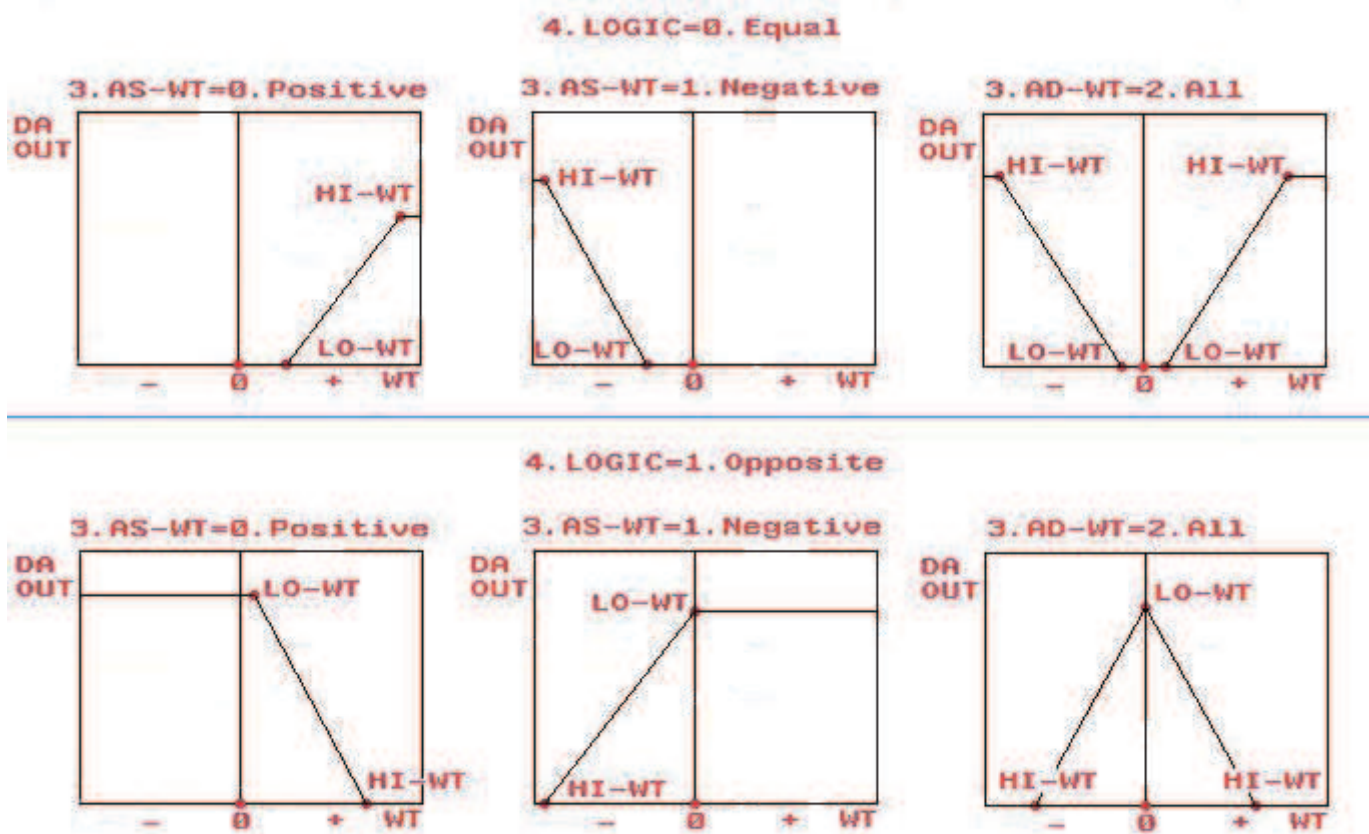
It adjust the setting content by need, to control the analog output working condition

Attached 5-3.4 : DA analog input parameter table

Item	Function	Function setting explanation		Default value
1.MODE	DA Output Mode	0. NO 1. 0V ~ 5V 2. 0V ~ 10V 3. 0mA ~ 20mA 4. 4mA ~ 20mA	No use Voltage input 0V ~ 5V Voltage output 0V ~ 10V Electric output 0mA ~ 20mA Electric output 4mA ~ 20mA	0. NO
2.INPUT	Input Source	0. MAIN 1. GROSS 2. NET 3. UART	Same as main display Gross weight Net weight Control the output from communication	0. MAIN
3.AS-WT	Weight Aspect	0. POS 1. NEG 2. ALL	Positive Negative All	0. POS
4.LOGIC	Weight Contrst DA Logic	0. EQU 1. OPP	Equal Opposite	0. EQU
5.LO-WT	Low Point Weight	0 ~ 9999999		0
6.HI-WT	High Point Weight	0 ~ 9999999		20000
7.LO-DA	Calibration Low Point DA Out	0 ~ 65535		0
8.HI-DA	Calibration High Point DA Out	0 ~ 65535		65535

When 2.INPUT = 3.UART it control the analog output by the communication to write the value

3.AS-WT weight is same and 4.LOGIC analog output logic are below

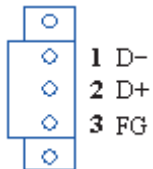


5-3.5 RS-485 / 232 Interface function setting

It adjust the setting by needs and control the interface working condition

RS232 & RS485 interface check bit is N , 8 , 1 (No parity bit , 8 data bit , 1 stop bit)

RS-485



RS-232



Pin 2 connected TXD
Pin 3 connected RXD
Pin 5 connected GND
Pin 1, 4 , 6 , 7 , 8 , 9 connected FG

Attached 5-3.5 : RS-485 / 232 interface parameter table

Item	Function	Setting value explanation		Default value
1.P-ID	Port ID	0 ~ 255		1
2.BAUD	BaudRate	0. 9600 1. 19200 2. 38400 3. 57600		1. 19200
3.PROC	Protocol	0. MODBUS 1. RS-1 2. RS-2 3. RS-3	Modbus RTU Stream(ASCII) Manual-transfer (ASCII) Command mode	0. MODBUS
4.RS232		0.EASY 1.USUAL 2.ALL	Simple format Standard format Printing format	1.USUAL

Modbus RTU Communication protocol explanation

Address	Function Code	Data Address	Data Value	CRC
---------	---------------	--------------	------------	-----

Address

Function code

Date Address

Data value

Check code

Function Code = 1 Read Bit

Function Code = 5 Write Bit

Function Code = 3 Read Data

Function Code = 6 Write Word Data

Function Code = 16 Wead Data

Communication position and data please refer to attached (—)MODBUS DATA ADDRESS

MODBUS Calibration explanation:

Calibration ZERO, setting FLAG BIT position 0513 zero calibration key

Calibration SPAN1 must be transfer the weight to position 2567 and setting FLAG BIT position 0514 calibration weight point 1 input key

Calibration SPAN2 must be transfer the weight to position 2571 and setting FLAG BIT position 0515 calibration weight point 2 input key.

Calibration SPAN3 must be transfer the weight to position 2575 and setting FLAG BIT position 0516 calibration weight point 3 input key.

ASCII interface protocol explanation

Format 1

1	2	3	4	.	5	6	7	CR	LF
Weight Data (8 digits)								Terminators	

Format 2

S	T	,	G	S	,	+	0	0	1	2	.	3	4		g	CR	LF
Header 1		Header 2			Weight Data (8 digits)								Unit		Terminators		

Format 3

D	A	T	E			2	0	1	0	/		4	/	2	2
T	I	M	E			2	3		2	4		4	1		
G	R	O	S	S		SP	2	3	4		6	7	8	K	g
N	E	T				SP	1	2	0		0	0	0	K	g
T	A	R	E			SP	1	1	4		6	7	8	K	g

Main display content ASCII code 10 bit transfer

When 3.PROC = 1.RS-1 Stream 4 data per seconds

When 3.PROC = 2.RS-2 touch off the PRINT signal and transfer 1 data

RS-485 / 232 Command format instruction

order	Function explanation	Order	Memo
MZ	Weight return to zero	MG	Display gross weight
MT	Tare Gross weight	MN	Display net weight
AT	Accumulate the weight and times	ST	Subtracts previous accumulate weight & times
CT	Clear tare	DT	Clear accumulate value
BB	Batch start(For built-in loading batch and unloading batch mode	BD	Unload start (For built-in loading batch mode
HB	Batch stop(For built-in loading & unloading batch mode		
RW	Reading	RS	Reading batch parameter setting value
RT	Read accumulate value	SS	Writing batch parameter settingvalue

2. If use the location:@01MZ

3. RS Command format:(using the locationCD01:)

	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes
CD:	FINAL	SP3	SP2	SP1	LO	HI	Z.BAND

4.SS Command format: (using the locationCD01:)

	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes	6 bytes
SS:	FINAL	SP3	SP2	SP1	LO	HI	Z.BAND

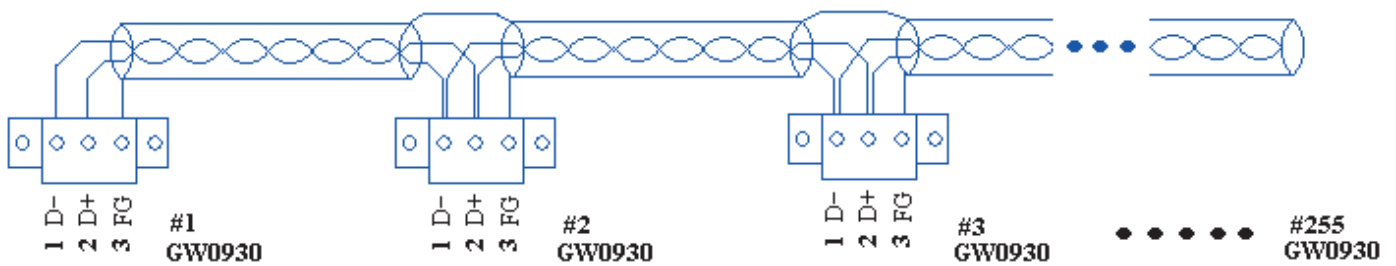
4. Error message:

E1: Incorrect command format.

E2: The parameter added is out of the range

E3: Unmatched executive condition

RS-485 connection diagram



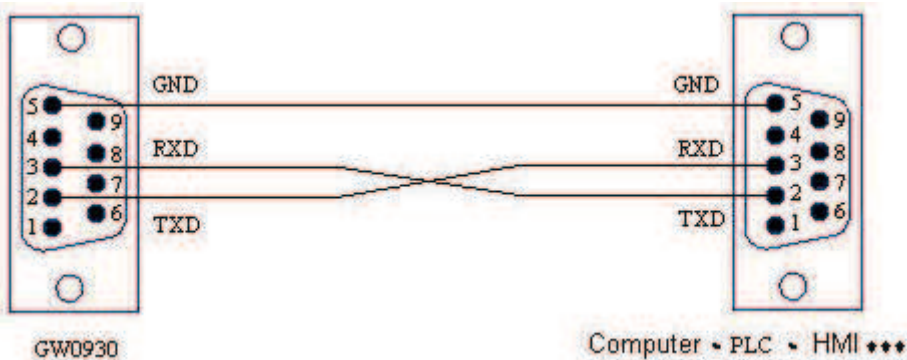
Transmission line:

To use twisted pair line of the outer layer shade superposition , the quality of the power transmission effect are enormous to the transmission signal , it is enormous in the transmission speed in high signal attenuation if use the poor twisted pair line , the transmitting distance will be reduced largely , and the anti-miscellaneous ability is badly it is easy to interfere by miscellaneous message , please use qualified twisted pair line in the high speed transmission far away distance or the occasion of high miscellaneous news

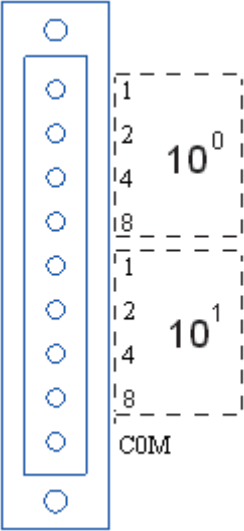
Terminal impedance:

There are has its characteristic impedance for each kind of transmission for the signal circuit , When the signal have send the message to terminal , if its terminal impedance nucleus's characteristic is difference, it will create the reflection , and caused the waveform to distort this distorted phenomenon is not so obvious in the short-time distance , but along with transmission line lengthen time will be getting progressively and causes to be unable transmit correctly seriously , at this time its must be install the end resistance (Terminal resistance is about 120Ω)

RS-232 Wire diagram



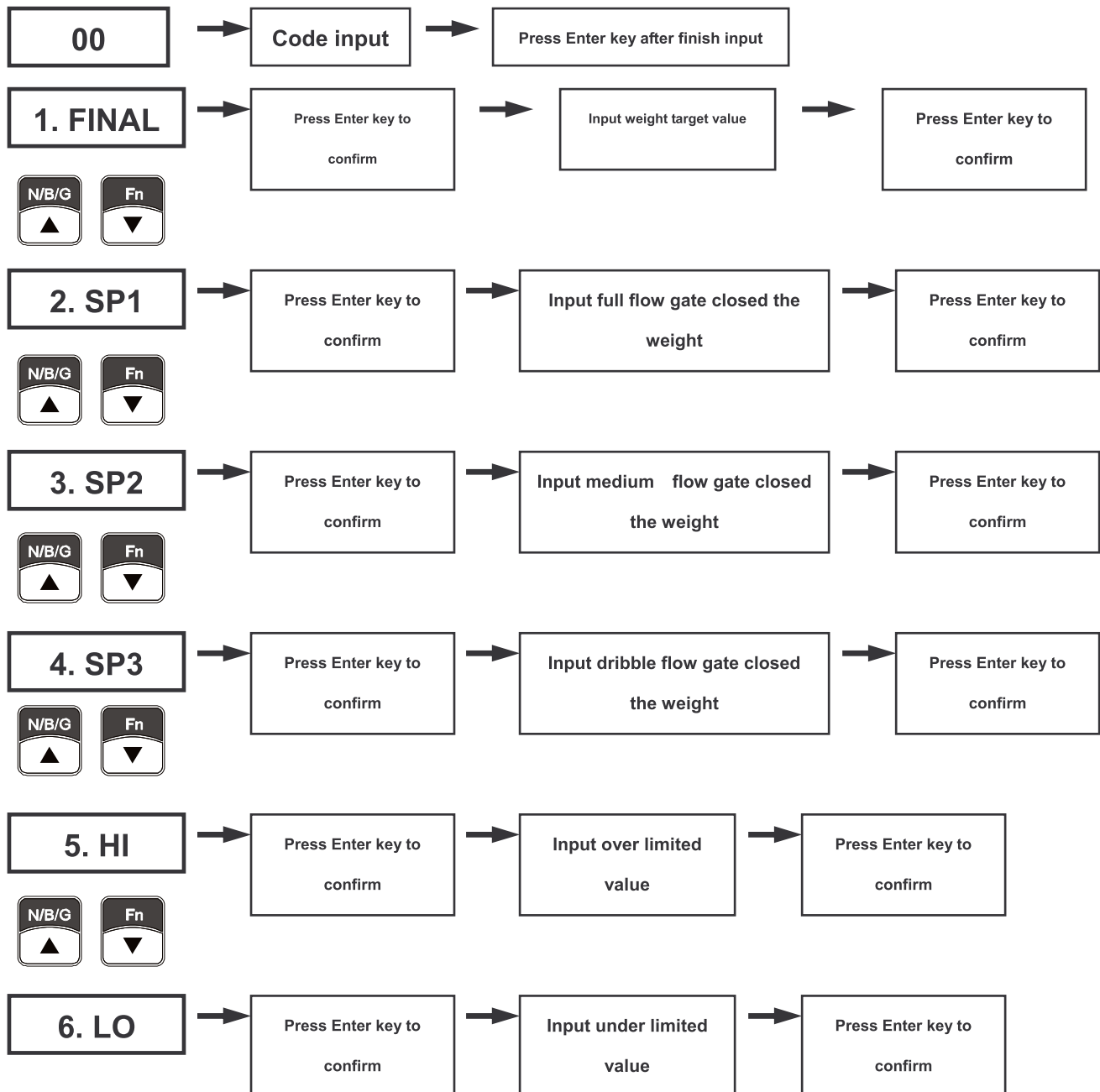
5-3.6 BCD RECALL FUNCTION SETTING



When FUNC function , NUM SY=1 , code recall control by BCD RECALL

5-4 Batching parameter setting

Under normal condition, press  key and  key at the same time , will enter to function parameter setting screen.



Press  key , back previous setting, press again it will escape the parameter setting

To choice the parameter code number and then choice the parameter setting value.

The Sub-display will show the parameter code number

Parameter setting value has setting by positive

Z.BAND parameter , use SQ/19. Z.BAND to setting

Chapter 6 Maintenance

Under normal condition, press  key and  key at the same time , enter to parameter function section

To choice 7.TEST enter checking function

● 6-0 DSP CHECKING

7 segments display and LED will flash 1 second, turn off 1 second and 7 segments displayer display 0~9 to display 1 second interval, LED will light from left to right step by step.

● 6-1 KEY CHECKING

Switch the calibration switch and press the keypad of front panel , compare display bit will show i -> I

● 6-2 ADC CHECKING

Display range from 0~524287(-1mV ~ 39mV)

● 6-3 UART CHECKING

The system transmit ASCII 0~9

If the communication output is RS232, the D-SUB connector Pin 2,3 are short circuit

When PASS figures appear, it indicates normal and when appear FIAL figures indicates malfunction.

If communication output is RS485 , please connect RS485 receiver , to resend all of the received code.

● 6-4 DA CHECKING

Press Upper, Down key to switch DA output 0: LO (zero value) 1 : HI (full value)

● 6-5 INPUT CHECKING

Input port signal ON/OFF and the compare display bit will move i -> I

● 6-6 OUTPUT CHECKING

Press Upper, Down keys to switch input port unitary port ON/OFF

● 6-7 EEP CHECKING

When PASS figures appear, it indicates normal, when FIAL figures appear, it indicates malfunction.

● 6-8 INIT F RESTORE FUNCTION PARAMETER TO DEFAULT VALUE

Press  key do not release the finger when PASS figures appear, it restore successfully.

If release the finger during the restore procedure, it indicates FIAL figures.

MODBUS DATA ADDRESS

FUNCTION (Function parameter setting table)

Position	Name	Set value	Length	Read/Write
40001	1: Sub Display setting	0: NO 1: Gross 2: Net 3: Hold 4: Tare 5: Accu Count / AccuValue 6:Batch Number / Batch Final 7:Count Number / Pcs Weight	Word	R/W
40002	2: F1 keypad function	0: NO 1: M+ 2: M- 3: MC 4: Clear Tare 5: Count Number	Word	R/W
40003	3: SETPOINT keypad function	6: Batch Start 7: Batch End 8: Batch Stop 9: Unload	Word	R/W
40004	4: F keypad function	10: Check Way Judgment 11: Print RS232 & RS485 12:Code Recall	Word	R/W

PROCEDURE SQ (Built-in program parameter setting table)

Position	Name	Set value	Length	R/W
Batching function control parameter section				
40257	1: batch parameter code	0 ~ 29	Word	R/W
40258	2: Batch program mode	0: NO 1: Normal batch 2: Loss-in-weight 3: Normal check weight 4: Normal batch (built-in program) 5: Loss-in-weight (built-in program) 6: Built-in peak hold batch	Word	R/W
40259	3: Batch number	0 ~ 60000 second Note : 0 = No limited the number	Word	R/W
40260	4: Batch start delay time	0.0 ~ 25.0 second	Word	R/W
40261	5: Batch accumulate function	0: Off 1: On	Word	R/W
Batch finish signal output control parameter section				
40262	6: Batch finish signal	0: Output unconditional 1: Waiting until the weight is stabilized	Word	R/W
40263	7: Batch finish output signal delay time	0.0 ~ 25.0 second	Word	R/W
40264	8: Batch finish output signal time	0.0 ~ 25.0 Note : 0 = Keep the output signal until the next batch start	Word	R/W

Supplementary loading control parameter section				
40265	9: Supplementary gate	0: NO 1: SP1 2: SP2 3: SP3	Word	R/W
40266	10: Supplementary number	0 ~ 60000	Word	R/W
40267	11: Supplementary loading gate open time	0.0 ~ 25.0 second	Word	R/W
40268	12: Supplementary loading gate close time	0.0 ~ 25.0 second	Word	R/W
Unload control parameter section				
40269	13: Unloading start condition	0: Manual-unloading 1: Auto-unloading	Word	R/W
40270	14: Unloading start delay time	0.0 ~ 25.0 Sec.	Word	R/W
40271	15: Unloading stop delay time	0.0 ~ 25.0 Sec.	Word	R/W
Batch compare control parameter section				
40272	16: Batch Compare condition	0: NO setting 1: Compare at any weighing moment 2: Automatic compare after batch over Zero Band 3: Compare after finish batch 4: Compare after the signal touch off 5: Batch finish + compare after signal touch off	Word	R/W
40273	17: Batch compare signal output delay time	0.0 ~ 25.0 second	Word	R/W
40274	18: Batch compare signal output hold time	0.0 ~ 25.0 second note: 0 = Keep until next batch start	Word	R/W
Zero range parameter section				
40275	19. Zero range	0 ~ 9999999	2Word	R/W

INPUT

Position	Name	Set value	Length	R/W
40513	1: Input 1	0: NO 1: Zero 2: Tare 3: NT/GS 4: M+ 5: M- 6: MC 7: Clear Tare 8: Count Number 9: Batch Start 10: Batch End 11: Batch Stop 12: Unload 13: Check Way Judgment 14: Print RS232 & RS485	Word	R/W
40514	2: Input 2		Word	R/W
40515	3: Input 3		Word	R/W
40516	4: Input 4		Word	R/W
40517	5: Input 5		Word	R/W
40518	6: Input 6		Word	R/W
40519	7: Input 7		Word	R/W
40520	8: Input 8		Word	R/W
40521	9: Input logic	0: Positive logic 1: Negative logic	Word	R/W
40522	Input status	0000 0000 (Binary method)	Word	R/W

OUTPUT

Position	Name	Set value	Length	R/W
40769	1: Output 1	0: No 1: Zero Band 2: HI 3: OK 4: LO 5: SP1 6: SP2 7: SP3 8: Unload 9: Running Built-in program of batch 10: Batch Finish 11: Overflow 9D 12: Directly to control output by communication position 40777	Word	R/W
40770	2: Output 2		Word	R/W
40771	3: Output 3		Word	R/W
40772	4: Output 4		Word	R/W
40773	5: Output 5		Word	R/W
40774	6: Output 6		Word	R/W
40775	7: Output 7		Word	R/W
40776	8: Output 8		Word	R/W
40777	9: Output Logic	0: Positive logic (Default) 1: Negative logic	Word	R/W
40778	Output status	0000 0000 (Binary method)	Word	R/W

RS-485 / 232

Position	Name	Set value	Length	W/R
41025	1: Location	0 ~ 255	Word	R/W
41026	2: Baud rate	0: 9600 1: 19200 2: 38400 3: 57600	Word	R/W

DA (Digital output parameter set table)

Position	Name	Set value	Length	R/W
41281	1: Output mode	0: 0V ~ 5V 1: 0V ~ 10V 2: 0mA ~ 20mA 3: 4mA ~ 20mA	Word	R/W
41282	2: DA Compare source	0: MAIN 1: GROSS 2: NET 3: UART	Word	R/W
41283	3: Weight value phase	0: Positive 1: Negative 2: Modulus	Word	R/W
41284	4: DA output logic	0: Concurrent direction 1: Reverse direction	Word	R/W
41285	5: Lower point of weight value	0 ~ 9999999 (Default 0)	2Word	R/W
41287	6: Higher point of weight value	0 ~ 9999999 (Default 20000)	2Word	R/W
41289	7: Amend lower point digital output	0 ~ 65535 (Default 0)	Word	R/W
41290	8: Amend higher digital output	0 ~ 65535 (Default 65535)	Word	R/W
41291	DA output	0 ~ 65535 (Default 0)	Word	R/W

ERROR MESSAGE

Position	Name	Set value	Length	R/W
41793	Rectify the error message	0 ~ 3	Word	R/W

CSP (Calibration parameter set table)

Position	Name	Set value	Length	R/W
42049	1:AD Sample Frequency	0: 100Hz 1: 50Hz 2: 25Hz 3:12.5Hz 4:6.25Hz	Word	R/W
42050	2: Unit	0: kg 1: lb 2: t	Word	R/W
42051	3:Decimal point	0: NO 1: Decimal point 1 2: Decimal point 2 3: Decimal point 3 4: Decimal point 4	Word	R/W
42052	4:Minimum graduation	0: 1 1: 2 2: 5 3: 10 4: 20 5: 50	Word	R/W
42053	5: Zero tracking time	0.00 ~ 10.0 Second (Default 1.0)	Word	R/W
42054	6: Zero tracking range	0.00 ~ 10.0 Graduation (Default 0.5D)	Word	R/W
42055	7: Unstable tracking time	0.00 ~ 10.0 Second (Default 1.0)	Word	R/W
42056	8: Unstable tracking range	0.00 ~ 10.0 Graduation (Default 0.5D)	Word	R/W

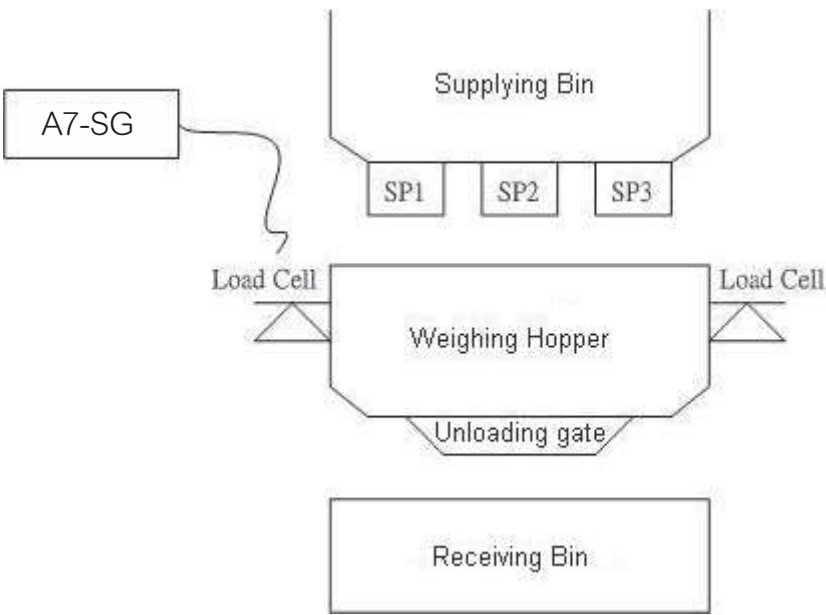
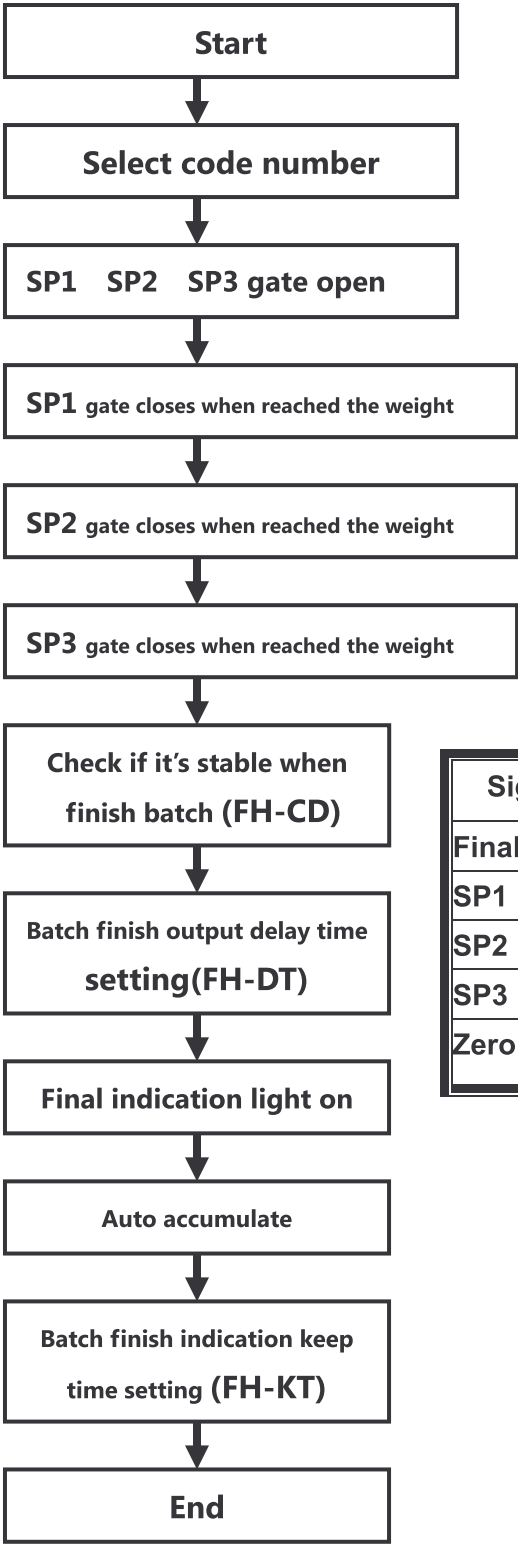
CALIBRATION

Position	Name	Set value	Length	R/W
42305	AD value		2Word	R
42307	Display value		2Word	R
42309	Gross		2Word	R
42313	Net		2Word	R
42315	Hold		2Word	R
42317	Tare		2Word	R
42319	Accumulate number		2Word	R
42321	Accumulate weight		2Word	R
42323	Zero compensate value		2Word	R
42561	Maximum capacity	0 ~ 9999999 (Default 9999999)	2Word	R/W
42563	Zero internal value	0 ~ 9999999 (Default 35000)	2Word	R/W
42565	Calibration point 1 internal value	0 ~ 9999999 (Default 250000)	2Word	R/W
42567	Calibration point 1 Weight	0 ~ 9999999 (Default 20000)	2Word	R/W
42569	Calibration point 2 Internal value	0 ~ 9999999 (Default 0)	2Word	R/W
42571	Calibration point 2 Weight	0 ~ 9999999 (Default 0)	2Word	R/W
42573	Calibration point 3 Internal value	0 ~ 9999999 (Default 0)	2Word	R/W
42575	Calibration point 3 weight	0 ~ 9999999 (Default 0)	2Word	R/W
42817	Batch value- Final	0 ~ 9999999 (Default 0)	2Word	R/W
42819	Set-point 1 of the material dropping section	0 ~ 9999999 (Default 0)	2Word	R/W
42821	Set-point 2 of the material dropping section	0 ~ 9999999 (Default 0)	2Word	R/W
42823	t-point 3 of the material dropping section	0 ~ 9999999 (Default 0)	2Word	R/W
42825	Weight compare higher point	0 ~ 9999999 (Default 0)	2Word	R/W
42827	Weight compare lower point	0 ~ 9999999 (Default 0)	2Word	R/W

Flag Memory Map

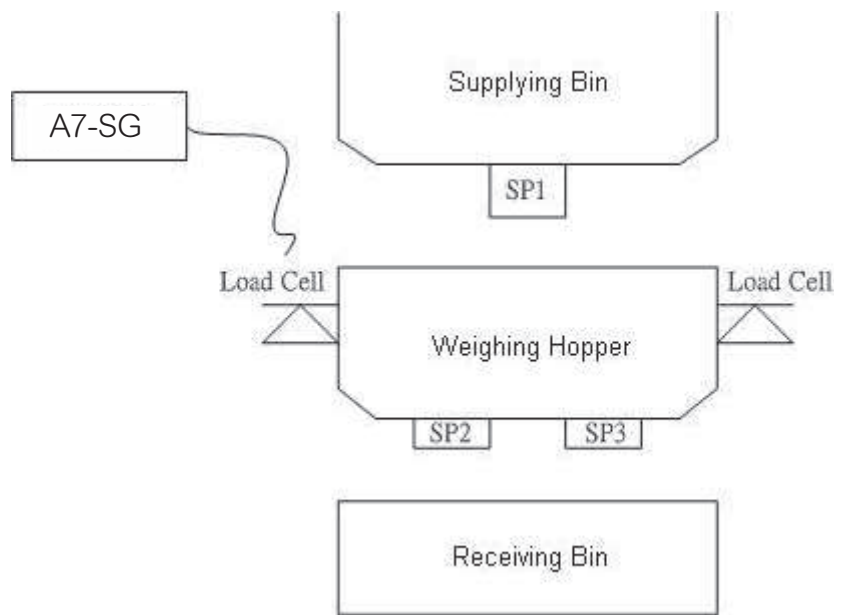
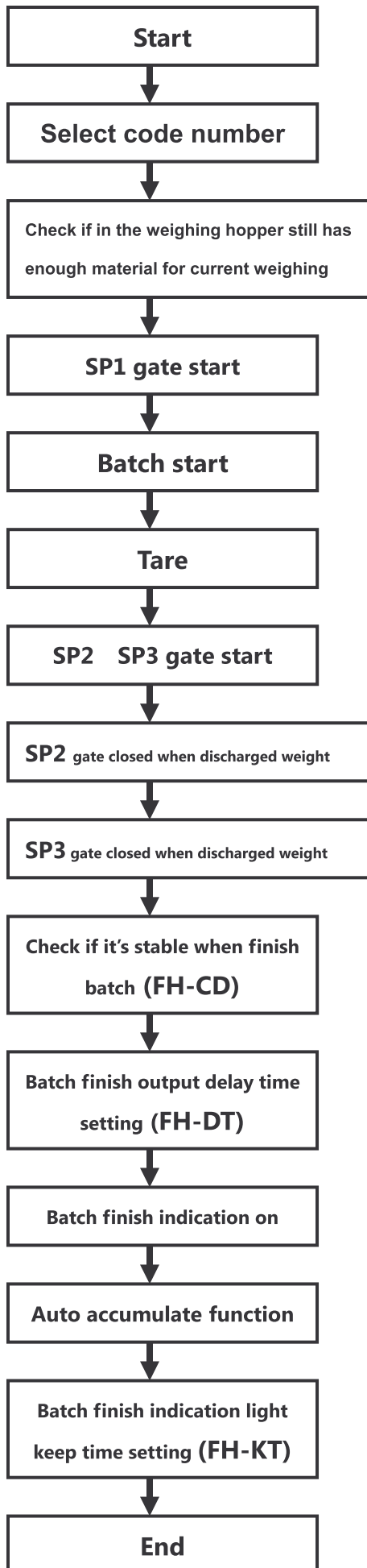
Position	Name	Length	R/W	Position	Name	Length	R/W
001	Error message	Bit	R	513	Calibration zero input	Bit	W
002	Overload	Bit	R	514	Calibration weight point 1 input	Bit	W
003	Unloading running	Bit	R	515	Calibration weight point 2 input	Bit	W
004	Hold	Bit	R	516	Calibration weight point 3 input	Bit	W
005	Gross weight	Bit	R				
006	New weight	Bit	R	769	Initial calibration parameter	Bit	W
007	Zero	Bit	R	770	Initial all of the parameter	Bit	W
008	Unstable	Bit	R	771	Initial function parameter	Bit	W
009	SP1	Bit	R	772	Clear batch data	Bit	W
010	Zero Band	Bit	R	773	Save communication set parameter value	Bit	W
011	Final	Bit	R				
012	Low	Bit	R				
013	High	Bit	R				
014	SP2	Bit	R				
015	Ok	Bit	R				
016	SP3	Bit	R				
257	Zero	Bit	W	1025	Batch start	Bit	W
258	Tare	Bit	W	1026	Batch close	Bit	W
259	Gross/Net weight switch	Bit	W	1027	Batch urgent to hold	Bit	W
260	Accumulate M+	Bit	W	1028	Unloading start	Bit	W
261	M- key	Bit	W	1029	Batch comparison trigger signal	Bit	W
262	Clear accumulate data key	Bit	W	1030	Got count unit weight	Bit	W
263	Clear tare	Bit	W	1031	Printing trigger signal	Bit	W
264	Clear zero compensation	Bit	W	1032	Deactivates the batch of hold	Bit	W

NORMAL LOADING BATCH



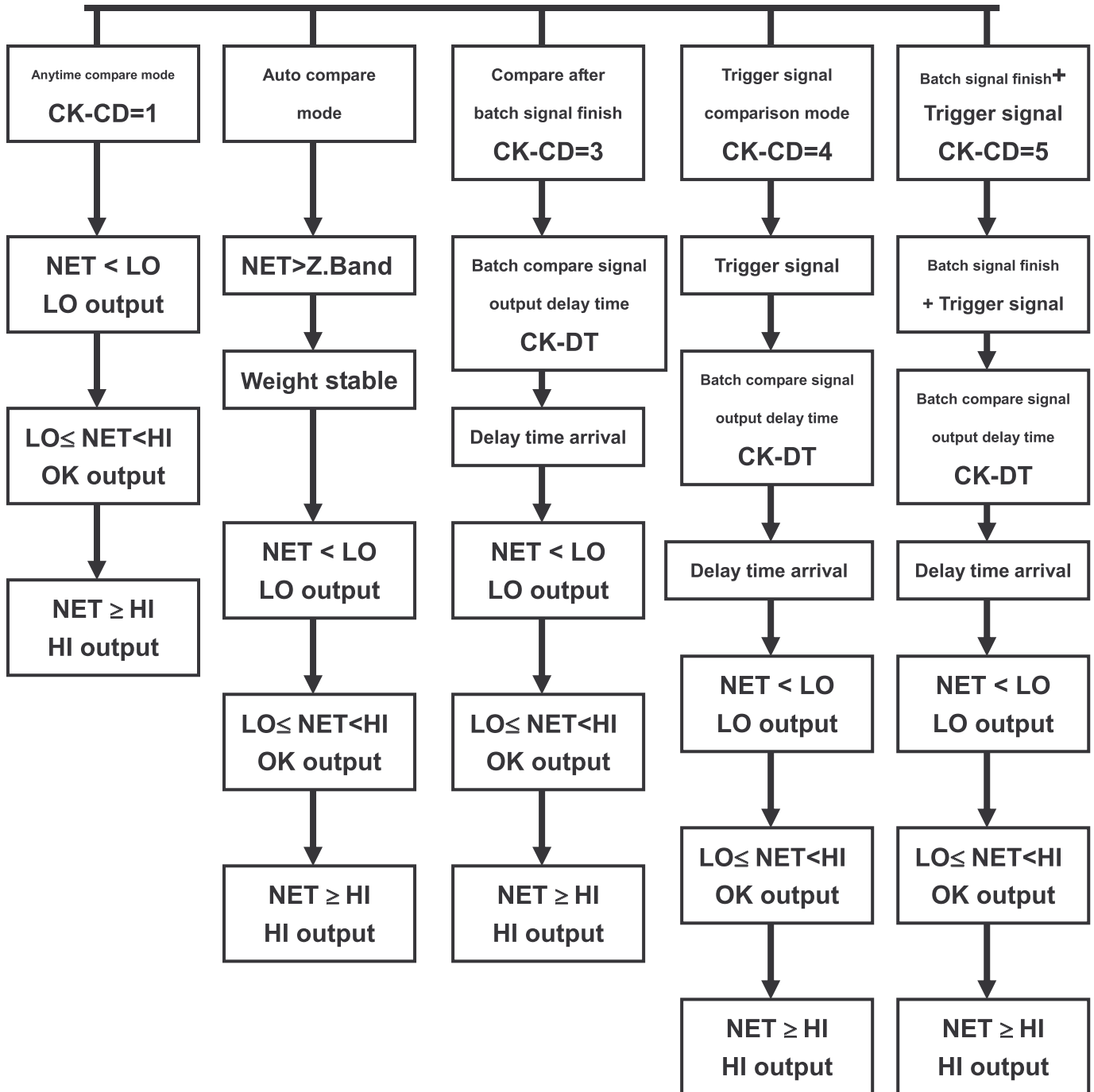
Signal	Output	Relay out	LED
Final	$NET \geq SP3$	ON	ON
SP1	$NET \leq SP1$	ON	ON
SP2	$NET \leq SP2$	ON	ON
SP3	$NET \leq SP3$	ON	ON
Zero.Band	$GR0SS \leq Zero.Band$	ON	ON

NORMAL DISCHARGING BATCH

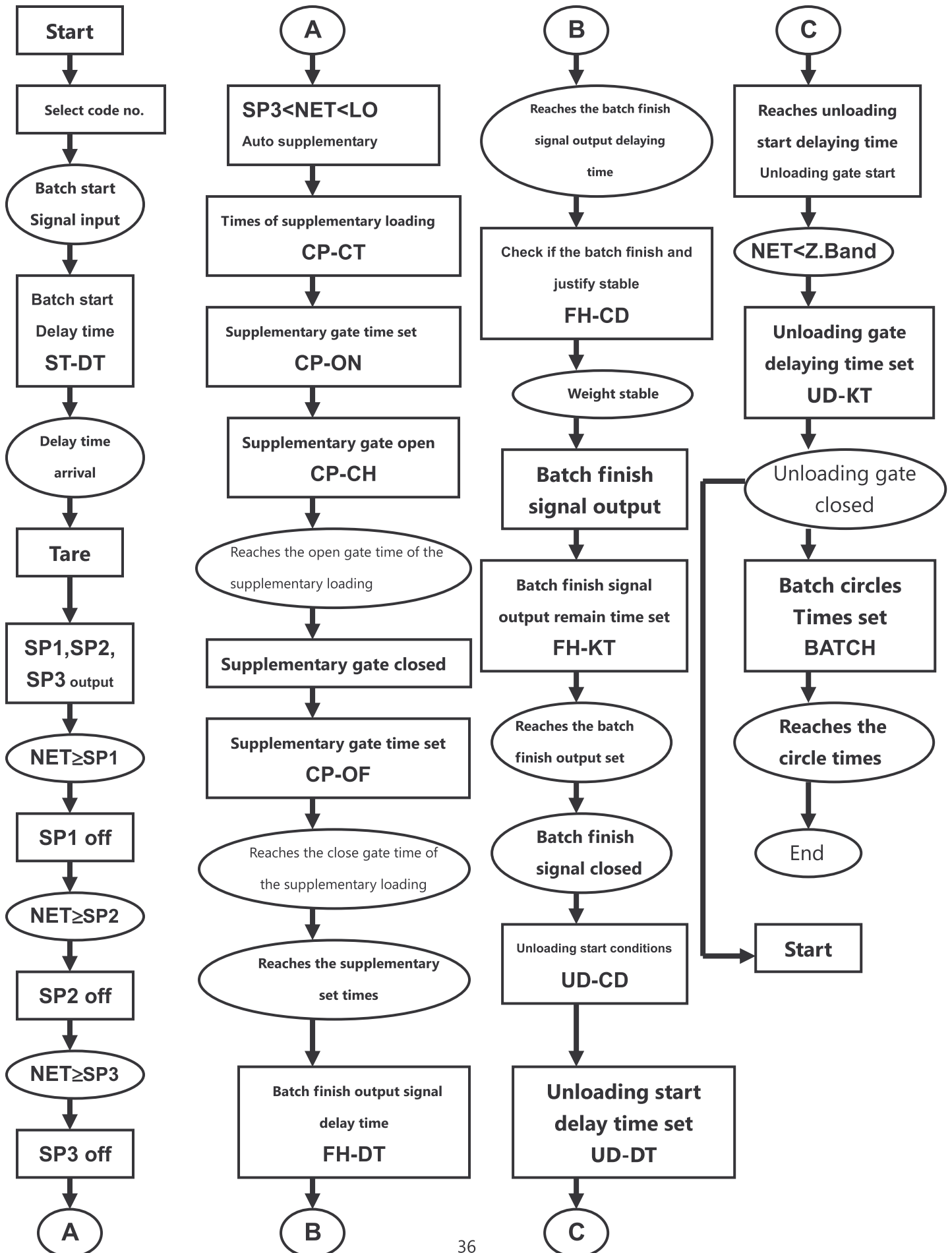


Signal	Output	Relay out	LED indication
Final	$NET \geq SP3$	ON	ON
SP1	$GROSS \leq SP1$	ON	ON
SP2	$NET \leq SP2$	ON	ON
SP3	$NET \leq SP3$	ON	ON
Zero.Band	$GROSS \leq Zero.Band$	ON	ON

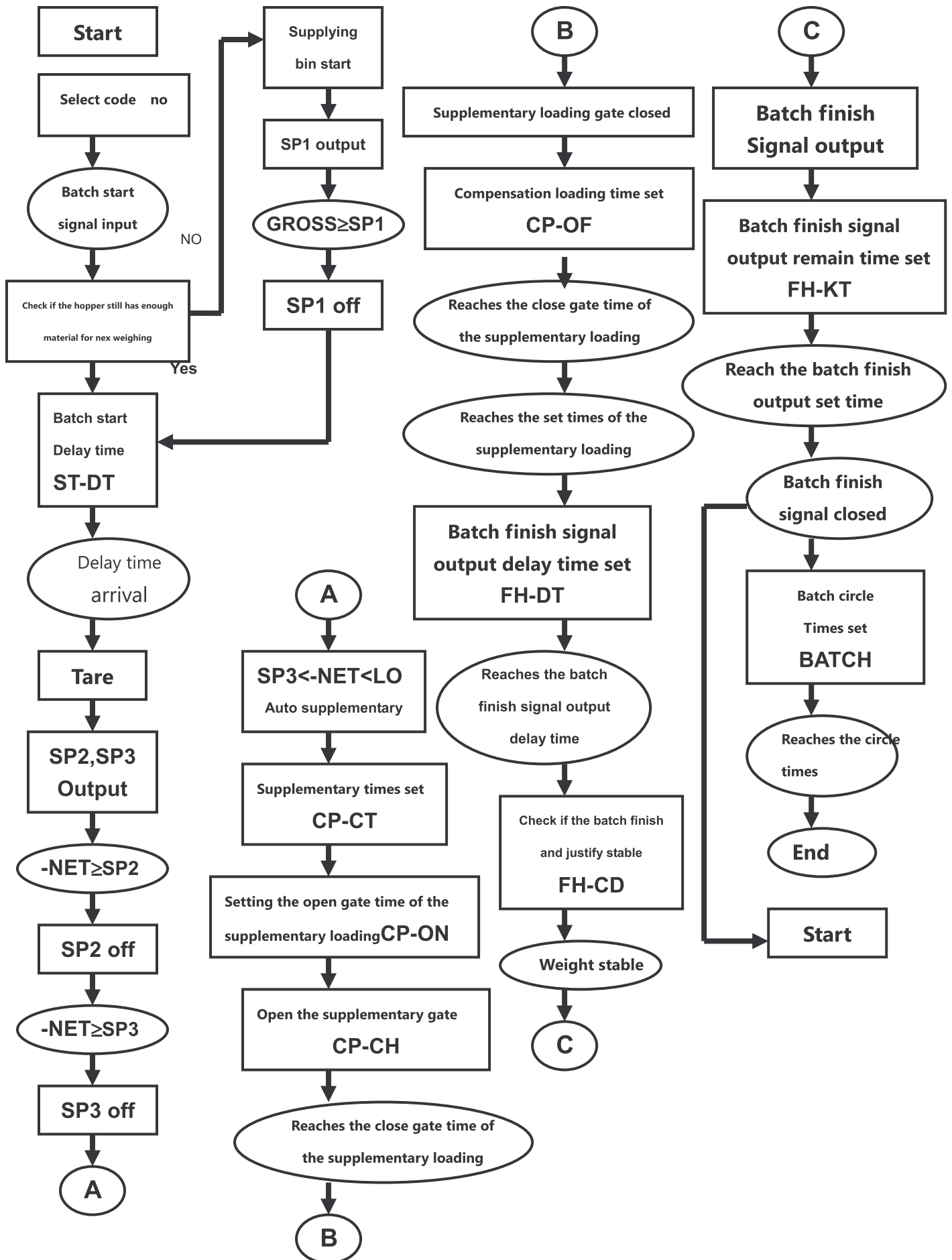
NORMAL COMPARE MODE



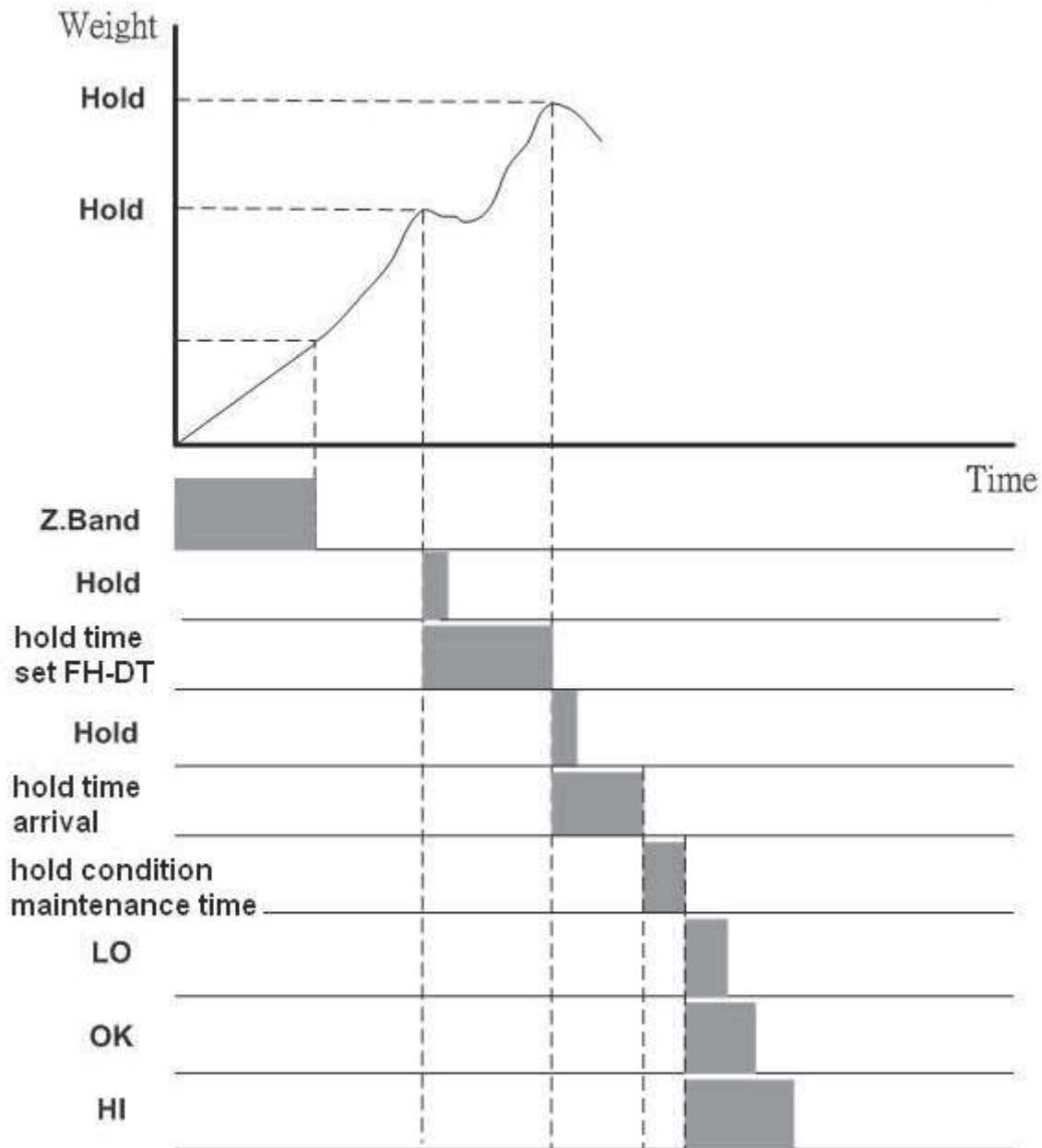
Built-in Charging batch Procedure



Built-in Discharging Batch procedure



HOLD MODE FLOW CHART



1. When $GROSS \geq Z.BAND$, enter to PEAK HOLD condition
2. Hold time setFH-DT : When HOLD , The time starts to time has the new maximum value in the time to capture newly immediately Maximum value , If over the time it will maintains in the time of the maximum value : (When set to zero, then it will captures the maximum value any times)
3. HOLD remain time FH-KT : Within set time, the HOLD value will be keep any time, the HOLD value will be clear upon over the time. (When set to "0" , it should be waiting t next HOL , HOLD vale will be clear)

Description of 7-Segment Characters

0		C		O	
1		D		P	
2		E		Q	
3		F		R	
4		G		S	
5		H		T	
6		I		U	
7		J		V	
8		K		W	
9		L		X	
A		M		Y	
B		N		Z	