UNI 800C

BATCHING CONTROLLER

INSTRUCTION MANUAL

LONGTEC

CONTENTS

CONTENTS

Chapter 1 GENERAL DESCRIPTION

1-1 GENERAL DESCRIPTION

The formula batching Weigher UNI800C adopt the control theory of sequence batching accumulating account.

UNI800C is widely used in the industry processing weighing, such as cereal, light industry, metallurgy, construction material, chemical industry, resource, and machine.

UNI800C is tested by the strict electromagnetic compatibility, product by adopting SMT, low profile, high reliability.

1-2 FEATURES

➢ User-friendly cabinet design
  ● Smallest DIN size (panel dimensions: 96mm*48mm) easy to mount in a control cabinet.
  ● Splash-proof front panel.
➢ High-performance A/D converter
  ● High-speed sampling, up to 100times/second
  ● High resolution, 1/16,000,000
  ● High sensitivity, 0.5μV/D.
➢ Digital Span Capability
  ● Capable of calibration by inputting an mV value without an actual load.
  ● Capable of directly reading a load cell output (mV/V), for easy installation and maintenance.
  ● Replaceable without re-calibration with an actual load in case of trouble.
➢ Flex Digital Filter allows installation in unstable environments
  ● Excellent vibration canceling performance.
  ● Widely covers form high-speed hopper scales to platform scales.
➢ Suit for all strain gauge load cell
  ● Powered up to 4 units of 350Ω load cell
➢ Adopting Delta-Sigma conversion method;
➢ Function of self-checking, when power on;
➢ Protection function setting and calibration by external switch;
➢ Switch power, voltage widely 85V∽265V AC;
➢ Optional interface board:
  ● Analog output interface;
➢ Up to 16 UNI800C can be connected by RS232;
➢ Up to 126 UNI800C can be connected by RS485 ;
➢ Standard output:
  ● RS232 or RS485 communication interface；
  ● 10 open collect control output,(up to 30VDC，300mA);
➢ The software can be changes fit to the customer's special technical data.

Chapter 2 SEPCIFITIONS

2-1 GENERAL

1.	Power Supply	: AC85V∽265V,50/60Hz ;
2.	Power Consumption	: ≈12W;
3.	Operation temperature	: -5℃ to 45℃（23℉to 117℉）;
4.	Elative Humidity	: ≤90%（non-condensation）;
5.	Weighing	: Approx 0.65kg;

2-2 DIGITAL SECTION

1.	Weight display	: Two windows 6 digits LED display;
		Main window 13mm
		Lower window 8mm
2.	Annunciators	: Gross，Net，Motion，Zero and unit（kg/t）;
3.	Negative sign indication	: "-"on the most left digit;
4.	Overload indication	: Display "DISP-L" OR "DISP-H";
5.	Maximum capacity	: 500∽100,000;
6.	Step width	: 1，2，5，10，20 or 50;
7.	Decimal point	: 4 different position can be selected

2-3 ANALOG SECTION

|		
1.	Load cell type	: All strain gauge load cell;
2.	Load cell supply	: DC 10V±5%，Maximum 150mA;
3.	Output sensitivity	: $0.5\mu V/D\sim200\mu V/D$;
4.	Input resistance	: more than 100MΩ at DC 500V resistance between each terminal;
5.	Zero point adjustment	: 0.05mV∽15.0mV;
6.	Span stability	: ±10ppm/k of F.S;
7.	Temperature coefficient	: ≤（0.0008%+0.3step width）/℃
8.	Non-linearity	: ≤0.005% of F.S;
9.	Conversion method	: Delta-sigma
10.	Sampling speed	: 100 times/second
11.	International resolution	: 16,000,000
12.	Maximum display resolution	: 10,000 divisions
13.	Comparison cycle	: approximate 100 times/second
14.	Baring	: Between input terminal (common, earth, each opto-coupler output ,analog output,)for 1 min, at DC 500V. Between power supply terminal and input terminal (common, earth, each open collect output, analog output)for 1min, at AV1500V。

2-4 OPTION：

1．Analog output   ： 0～5V，0～10V，
                                                        0～20mA ,4～20mA, (selectable)

2-5 POWER ON

When power on, the UNI800C will display [8.8.8.8.8.8.] for about 3 seconds. Enter into the normal weighing mode after calibrating automatically. The error message will be displayed if there are some errors. The error explanation and the resolution refer to the <<5-5 error code for UNI800C>>.

2-6 FRONT PANCEL AND KEY DESCRIPTION
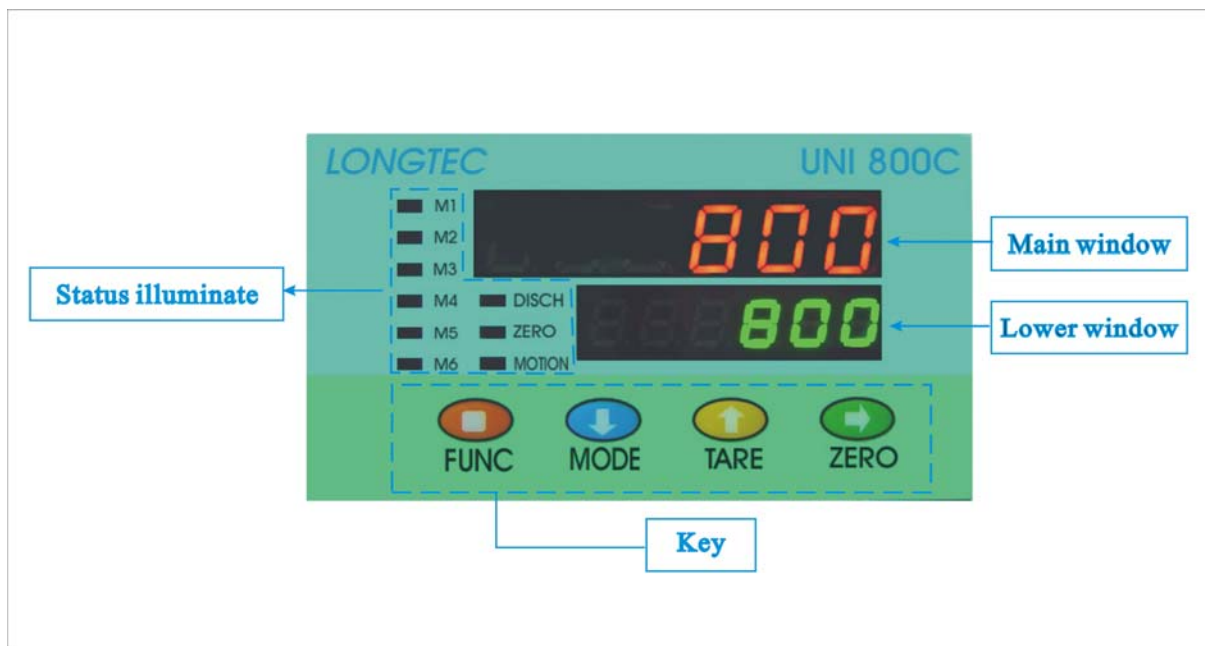
2-6-1 FRONT PANCEL DESCRIPTION

display	Weighing	Select the menu	Batching	Finishing feed	setting
Main window	The active material gross weight	Name of the menu	Material real time total weight	Material real time total weight	Code for items
Lower window	The active material net weight	null	The active feed material weight	The active Material net weight	Set value

2-6-2 STATUS ILLUMINATED

Illuminated	Indicates when the light is on:	Indicates when the light is off:
M1	Material 1 batching run	Material 1 batching is off
M2	Material 2 batching run	Material 2 batching is off
M3	Material 3 batching run	Material 3 batching is off
M4	Material 4 batching run	Material 4 batching is off
M5	Material 5 batching run	Material 5 batching is off
M6	Material 6 batching run	Material 6 batching is off
DISCH	Batching finish output	—
ZERO	The scale in gross weight zero	—
MOTION	The scale in motion	—

2-6-3 FUNCTION DESCRIPTION FOR KEYS

The keys have different function definitions according to the mode, the main are:

1. Weighing mode;
2. Batching mode;
3. In the Menu;
4. Value setting mode;
5. Formula setting mode;
6. Calibration mode;

The detail description as following:

◆ Weighing mode;

At the moment the upper display the actual weight, the lower display the final value. Now the batching process is not runes.

Key	Description for the function	Description	label
MODE	tare	When the controller display weight, at the same time display weight stability (**MOTION** light is off), then press the key to tare.	[√]
TARE	selection	Display all kinds of main menu by circle press the key, now the main window displays the menu name. When display these menu, the batching process of the equipment can not be affected. The detail list of the menu sees the following.	[√]
ZERO	zero	（required the set function F1.09 When UNI800C display weight, at the same time display weight stability (**MOTION** light is off), then press the key to zero. (Only if the weight in the zero range).	[√]

◆ Batching mode;

Chapter 2   SPECIFICATIONS

The main window displays the total weight of the hoper; the lower window displays the batching material's batched weight (i.e. fall quantity).

key	Description	Note	label
FUNC	exit	Press the **FUNC** key + **MODE** key，exit batching process forcibly.	[√]

◆ IN THE MENU

Now the upper display main menu, the lower is null.

key	Description	Note	label
FUNC	return	Return to upper menu or weighing status	[√]
TARE	change	Press the key can circle display all kinds of menu, now the upper window displays menu name.	[√]
ZERO	confirm	Enter the submenu	[√]

2-3-4 KEY OPERATION IN SETTING VALUE

key	Description	Note	label
FUNC	return	Return to super menu, and stored setting	[√]
MODE	select	Circle select built-in function setting	[√]
ZERO	confirm	Confirm the setting and enter the following value setting.	[√]

2-3-5 KEY OPERATION IN FORMULA SETTING

The main window displays formula code; the lower window displays the setting value.

key	Description	Note	label
FUNC	Return	Return to the super submenu and store setting.	[√]
MODE	Change	Circle update corresponding data	[√]
TARE	Displace	Displace the amended data code, the corresponding position can blink.	[√]
ZERO	Confirm	Confirm the data and enter the next setting.	[√]

2-3-6 KEY OPERATION IN CALIBRATION

Now the main window display calibration code, the lower window display calibration value

key	Description	Note	label
FUNC	Return	Return to the supper submenu to store it.	[√]
MODE	Change	Circle change corresponding data.	[√]
TARE	Displace	Displace the selected digital, the corresponding position will blink.	[√]
ZERO	Confirm	Confirm the data and enter the next setting.	[√]

Chapter 3 INSTALLATION AND CONNECTIONS

3-1 CUTOUT DIMENSION（UNIT：mm）

62

162.5

SIDE
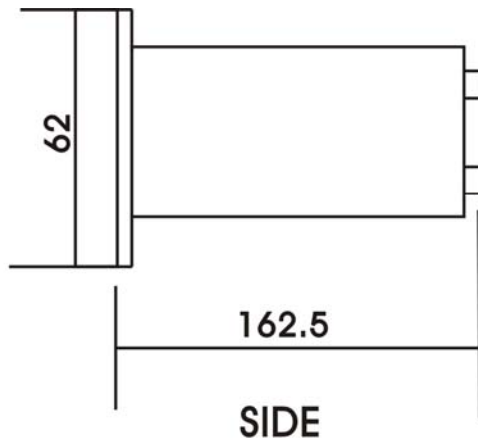
(When plug in,please reserve the wiring place)

92+0.5

46+0.5

Min82

Min 135
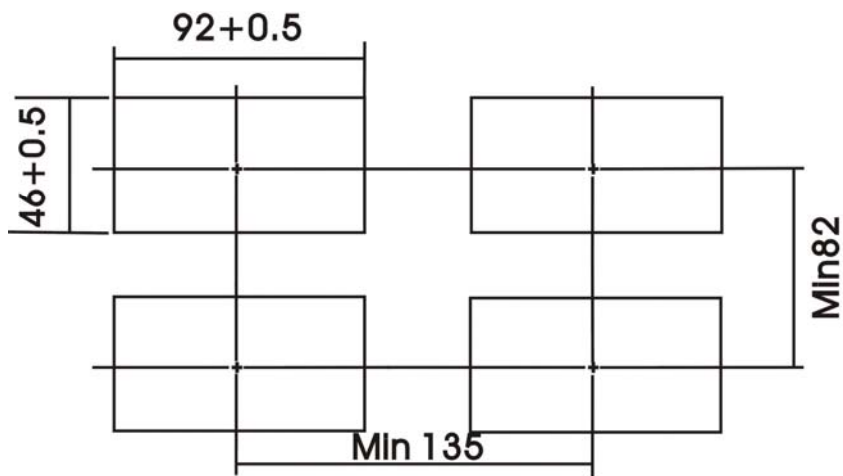
CUTOUT

3-2 TERMINAL DESCRIPTION

LONGTEC UNI800C

(Emitter Comm)
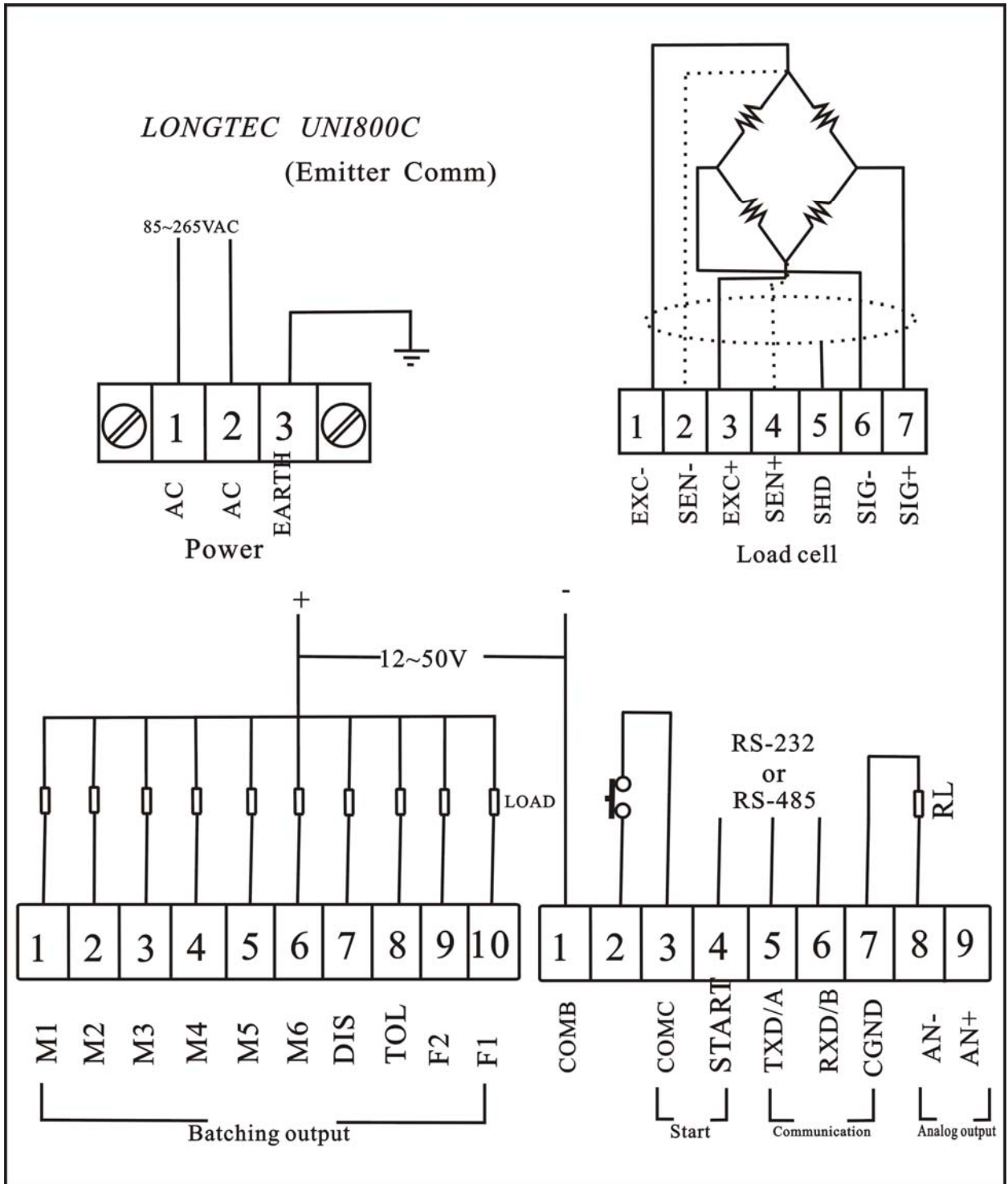
1．Power Supply   ：AC, AC, EARTH
2．Load-ell   ：EXC-, SEN-, EXC+, SEN+, SHD, SIG-, SIG+
3．Batching Output   ：M1, M2, M3, M4, M5, M6, DIS, TOL, F2, F1
   M1, M2, M3, M4, M5, M6 are material hoper；
   DIS Discharging output；

TOL Over limit output；

F2 2# discharging value output;

F1 1# discharging value output;

4. Start Input   ：START, COMC

5. Serial communication interface：TXD/A, RXD/B, CGND

6. Analog output：AN-, AN+

3-3 CAUTION

■ ENVIRONMENT
- ◆ This is a precision electronic indicator. Handle it very carefully.
- ◆ The working temperature range is -5~+40℃.
- ◆ Install it in a place free form the direct sunlight.
- ◆ When water drops may splash over the indicator, attach it to a control panel, using the accessory packing.
- ◆ This makes the indicator's front panel splash-proof.

■ CONNECTION
- ◆ Prior to connecting the power source, read the manual thoroughly.
- ◆ Be sure to earth ground the indicator. Use independent grounding if possible. Try not to share grounding with electric devices that create electrical noise.
- ◆ The power source should be either 100 to 120 VAC +10%/-15% specification, or 200 to 240 VAC +10%/-15% specification; with a frequency of 50 or 60 Hz. Use a stable power source free form instantaneous dropout or noise. Sharing a power line could result in malfunctioning.
- ◆ The load cell output is very weak. Do not install any noise-generating device near the load cell or the load cell cables.
- ◆ Each input/output cable should be shielded and connected the shield terminal. Use the indicator could induce electrical noise.

CAUTION：Be sure the UNI800C be grounded well, otherwise the display may be in motion.

3-4 LOAD CELL CONNECTION

Meanings of the Pin:

Pin Name	Signal
EXC+	Excitation Voltage output+
SEN+	Excitation Voltage Feedback+
EXC-	Excitation Voltage output -
SEN-	Excitation Voltage Feedback -
SIG+	Signal input+
SIG-	Signal input -
SHD	Shield

（1）The 4-wire connection

The load cell input of the UNI800C for 4-wire connection. The shielded load cell cable should be used and kept separate form AC or other noise generating wire.
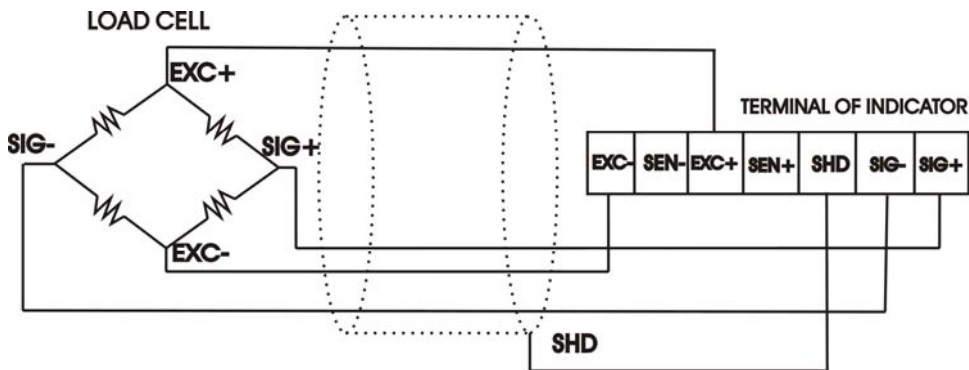
4-wire connection

（2）The 6-wire connection

The load-cell input of the UNI800C for 6-wire connection. The shielded load cell cable should be used and kept separate form AC or other noise generating wire.
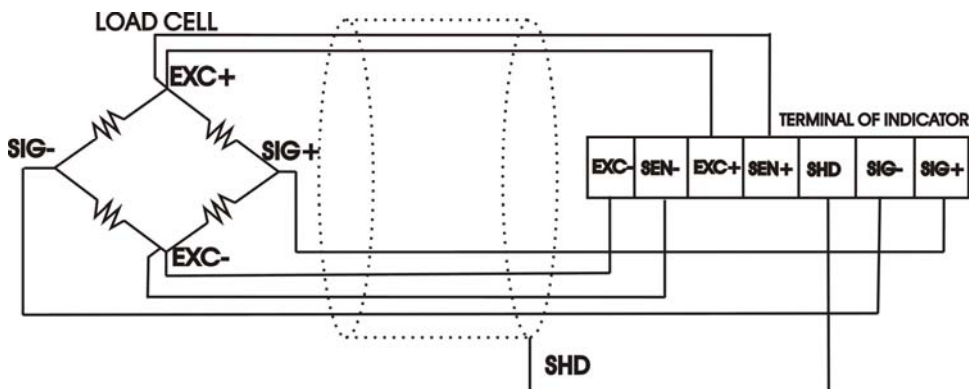
The above is the wiring of 6 load cell

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

（3）Connecting load cells in parallel

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

A summing junction box should be used to facilitate connection and corner correction
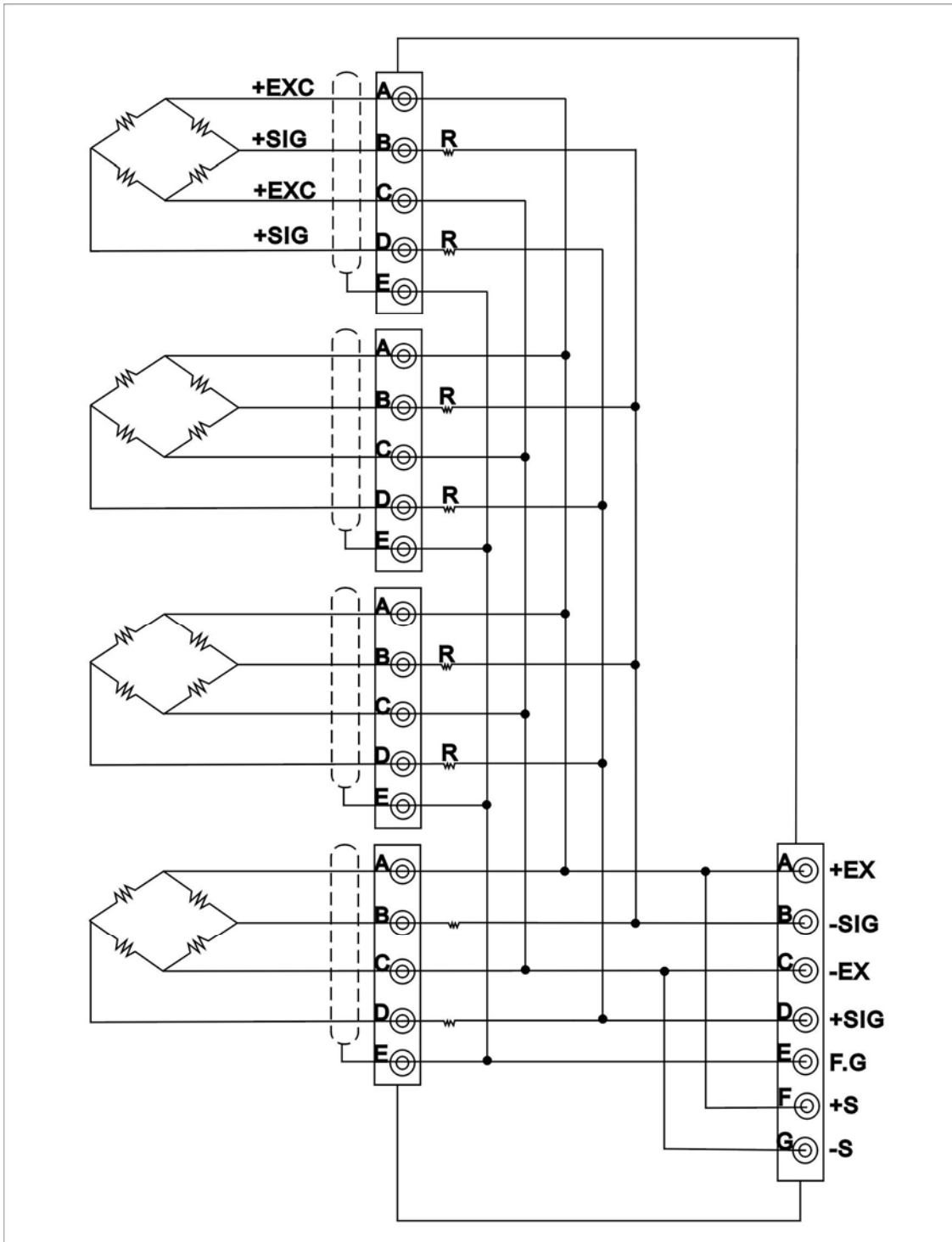
◆ When connecting several load cells in parallel, load cell capacity should be higher than expected load to compensate for mechanical shock or eccentric loading.

Chapter 4 FUNCTION SETTING

4-1 SETTING OPERATION

A. In the weighing mode, press the TARE key to select "**SET-F**", and press the ZERO key to enter the secondary menu;

B. In the secondary menu, press the TARE key to select "**F1** or **F2** or**F3**", and press the ZERO key to enter setting menu;

C. In the setting menu, press the MODE key to select the set value, and press the ZERO key to enter the next setting;

D. During the whole setting, press the FUNC key to store setting and return to the supper menu or weighing mode.

Chapter 4   FUNCTION SETTING

4-2 F1 GENERAL FUNCTION SETTING

F1" is the basic function of UNI800C, it is selectable, the used setting was built-in in UNI800C, user can select some function but need not update the value。

In the setting menu, press the ⬇ MODE key to select the value, press the ➡ ZERO key to confirms and enter the next setting; press the ⬤ FUNC key to store settings and return to the submenu. Detail description as following:

The first grade menu	The second grade menu	Description	Note
F1		Hoper setting menu	
	F1　01	The maximum capacity setting（500~100000）	The table of the maximum capacity and the division refer to the appendix of the chapter
	F1　02	Division　setting	
	F1　03	Decimal point position setting	Total five decimal point position Choice from 0—4
	F1　04	Automatic zero track range	OFF；1d；2d；3d；4d is tracking range(display division)
	F1　05	Formula select	There 8 item:　01—08,the default is01,there are only 1 item temporarily.
	F1　06	Delay display time after finished batching	0.0，0.5. ｡｡｡ 5.0 second selectable.
	F1　07	Motion detective range	OFF；1d；2d；5d；10d is motion range(display division)
	F1　08	Digital filter setting	There are ten choice from 0 to 9,select the suitable setting according to the stability of the system.
	F1　09	Zero range by handle	1%-10%　of the full capacity
	F1　10	Zero range automatically	0%-5% of the full capacity, 0% is forbidden　zero
	F1　11	Display rewrite rate	1times/second，5times/second，10times/second，15times/second，30times/second

Chapter 4　　　FUNCTION SETTING

F1　01：The maximum capacity setting, there are 22 items that can be set, they are 500，1000，1200，……100000. The default is 15000.

There is an overload sign "OL" display, when the display＞ the maximum capacity +9 division.

The maximum capacity set also limit the analog output range. For example: when analog output selects 4-20mA, the maximum capacity selects 10000,then ,when the display is 0, the corresponding analog output is 4mA;when the display is10000, the corresponding analog output is 20mA.

F1　02：The division select, there are 6 items that can be set, they are 1,2,5,10,20,50. The default is 1.

It is mainly select display data quantity of change, for example if select 5, each jump (increase or decrease) of the most last position changes in 5 unit; at the same time, the set value has some relation with the maximum capacity, they should satisfied with the following inequality. The relation table between the maximum capacity and the display division refer to the appendix following:

$$\frac{1}{15000} \leq \frac{display\ division}{the\ \mathrm{ma}ximum\ capacity} \leq \frac{1}{300}$$

F1　03：The decimal point position select, there are 5 items that can be set, they are 1，0.1，0.01，0.001，0.0001. The default is 1.

The decimal point position set is select by handle; the decimal point has no relation with the maximum capacity and display division. At the same time, when we set the other function (for example: formula setting), the decimal point position is default though there is no decimal point be display. For example, there number 123456 is displayed ,if the decimal point select 0.1, then it display 12345.6 if the decimal point select 0.001, then it display 123.456；

F1　04：Automatic zero track range set they are : OFF，1d，2d，3d，4d, there are total 5 items, The default is OFF.

It is used in automatic zero tare for some weight change slow situation (for example, temperature drift, leak material). In normal situation, it should be shut off.

F1　05：The formula select, there are 8 function items that can be set, they are 01-08. The default is 01.

F1　06：Delay display time, it can be select from 0.0，0.5，1.0，1.5，2.0，2.5，3.0，3.5，4.0，4.5，5.0.

F1　07：Motion detect range select, there are 5 items that can be set, they are OFF；1d；2d；5d；10d. The default is 1d.

F1　08：Digit filter select, there are 10 items that can be set, they are 0……9. The default is 3.

F1　09：Automatic zero range by handle, there are 10 items that can be set, they are 1%……10%(it is the percentage by the maximum capacity). The default is 5%.

F1　10：Automatic zero range when power on, there are 6 items that can be set, they are 0%……5% (it is the percentage by the maximum capacity). The default is 0%.

F1　11：Display rewrite rate, there are 5 items that can be set, they are 1，5，10，15，30. the default is 10 times/second.

Chapter 4　　FUNCTION SETTING

◆ Appendix: the corresponding table between the maximum capacity and the division setting (the decimal point excluding).

Division capacity	1	2	5	10	20	50
500	√					
1000	√	√				
1200	√	√				
1500	√	√	√			
2000	√	√	√			
2500	√	√	√			
3000	√	√	√	√		
4000	√	√	√	√		
5000	√	√	√	√		
6000	√	√	√	√	√	
8000	√	√	√	√	√	
10000	√	√	√	√	√	
12000	√	√	√	√	√	
15000	√	√	√	√	√	√
20000		√	√	√	√	√
25000		√	√	√	√	√
30000		√	√	√	√	√
40000			√	√	√	√
50000			√	√	√	√
60000			√	√	√	√
80000				√	√	√
100000				√	√	√

Note: the label√ indicate that it can be set.

4-3 **F2** BATCHING FUNCTION SETTING

The "**F2"** is batching function setting; User can update the setting in certain range.

A. Press the ⬆ TARE key to select the digital in this menu, then the digital will blink;

B. Press the ⬇ MODE key to input the number that needed to update, select the number from 0 to 9 in circle;

C. Press the ➡ ZERO key to confirm and enter the next setting,;

D. Press the ⬛ FUNC key to return to the submenu.

The detail description as following:

The first menu	The second menu	Description	Note
F2		Scale application setting	
	F2 01	Batching start wait timer	0.0 second-9.9 second can be set
	F2 02	Automatically tare wait timer	0.0 second-9.9 second can be set
	F2 03	Full flow comparator inhibiter timer	0.0 second-9.9 second can be set
	F2 04	Dribble flow comparator inhibiter timer	0.0 second-9.9 second can be set
	F2 05	Judgment wait timer	0.0 second-9.9 second can be set
	F2 06	Discharging start wait timer	0.0 second-9.9 second can be set
	F2 07	Allow total error range	0.0%-9.9% can be set, percent by target weight
	F2 08	Discharge Zero range	0.0%-9.9% can be set, percent by target weight.
	F2 09	Automatic Compensation times	00-99 seconds can be set
	F2 10	Over limit Detect times	00-99 seconds can be set
	F2 11	Allow automatic tare times	00-99 seconds can be set

F2 01：Batching start wait timer, 0.0 second-9.9 second can be set, the default is 0.5 second.

There will be vibration at the start of the system; the batching sequence should be start after a delay time, in order to avoiding error at the start of the system due to the instability.

F2 02：Automatically tare wait timer, 0.0 second-9.9 second can be set, the default is 0.5 second.

There will be vibration at the start of the system; the batching sequence should be start after a delay time, in order to avoiding error at the start of the system due to the instability.

F2 03：Full flow comparator inhibiter timer, 0.0 second-9.9 second can be set, the default is 0.5 second.

When the store bin start to supply to the hopper and finish supplying material, because of material impacting and dead stopping, hence the hopper vibrates to cause the display instability. Special the hopper is light type, when the material substance rushes into the hopper, because of gravity acceleration, the recipe weight signal of the hopper will more than the actual weight. So, during this period, we can

Chapter 4   FUNCTION SETTING

adopt interrupter comparison control output time, improve the accuracy and stability.

F2 04：Dribble flow comparator inhibiter timer, 0.0 second-9.9 second can be set, the default is 0.5 second. When the store bin start to supply to the hopper and finish supplying material, because of material impacting and dead stopping, hence the hopper vibrates to cause the display value instability. Specially the hopper is light type, when the material substance rush into the hopper, because of gravity acceleration, the recipe weight signal of the hopper will more than the actual weight. So, during this period, we can adopt interrupter comparator inhibiter timer, improve the accuracy and stability of the system.

F2 05： Allow error detect timer setting, 0.0 second-9.9 second can be set, the default is 3.0second.
In order to avoiding the possibility disturbance, the control will be delayed for a period after the material discharging, then record the weight and over limit detect, ensured that the record of the weight and over limit detecting were worked in the stability weight. user can set the timer according to the system′s actual stability status.

F2 06：Delay close discharge timer setting, 0.0 second-9.9 second can be set, the default is 2.0second.
It set to ensure the material was discharge totally and the discharge valve was closed completely. The description of this timer refers to the batch theory chapter.

F2 07：Allow error range setting, 0.0%-9.9% can be set (percent of target weight) . The default is 0.2%.
It is used in over-limit alarm and error automatically amendment.

F2 08：Discharge zero range setting, 0.0 %second-9.9 second can be set, the default is 1.0%.
It set to ensure the material was discharge totally and the discharge valve was closed completely. The description of this timer refers to the batch theory chapter.

F2 09：Automatic compensation times setting, 00-99 can be set; The default is 1.
The automatic compensation can be set every how many times, when the set is 00, the automatic compensation function is closed.

F2 10：Over limit detect times setting, 00-99 can be set, the default is 01.
The over limit detect times setting can be set every how many times, when the set is 00, the over limit detect times function is closed.

F2 11：Allow automatic tare times setting, 00-99 can be set, the default is 01.
The allowed automatic tare times setting can be set every how many times, when the set is 00, the allowed automatic tare function is closed.

4-4 F3 COMMUNCATION FUNCTION SETTING

The "**F3"** is communication setting, the function setting which can be used has been built in UNI800C; User can select some function and need not update it.

A.   Press the **MODE** key to select the set value in this menu,

B.   Press the **ZERO** key to confirm and enter the next function,

C.   Press the **FUNC** key return to the submenu. The function description as following:

F3		Serial communication set	
	F3..01	Output format select（0～6）	0：longtec continuous format 1：longtec command format 2：longtec automatic format
	F3..02	Parity and character send（0/1）	0：send no parity in longtec continuous format 1：send parity in longtec continuous format
	F3..03	Baud rate select（1200～38400）	1200/2400/4800/9600/19200/38400
	F3..04	Communication digital select	! when adopt 920 compatible protocol(the functionF3.1=3/4/5),then the function is fixed 2; when adopt protocol(the setting F3.1=3/4/5),then the setting is fixed 0. 0：8 bit length/no parity 1：7 bit length /odd 2：7 bit length /even
	F3..05	ID address（00-15）	It is applied in address code knowledge by one host and sub-units,
	F3..06	Customer order format select（0/1）	0：the above set is valid. 1：the special communication format applied by the user.

F3 01：Serial communication format select, the function 0-6 can be set, the default is 1.
     It is suitable for all kinds of communication requirement.
F3 02：Send parity and character, 0/1 can be set, the default is 0 second.
F3 03：Baud rate, 1200——38400 can be set, the default is 9600.
F3 04：Communication digital select, 0/1/2 can be set, the default is 0.
F3 05：ID code set, the function from: 00——15 can be set, the default is 00.
     It is mainly used in one host to multi-UNI800C communication system,
F3 06：The customer order format select, 0/1 can be set, the default is 0.
     When select 0, the above set is valid; when the set is 1, the corresponding communication protocol

Chapter 4　　FUNCTION SETTING

was made by the customer.　The above function is valid partly.　（F3-03/04/05 is valid）

Appendix: setting referring table

	Function item	default	Explanation for the customer′s set
F1.1	The maximum capacity	15000	
F1.2	Division	1	
F1.3	The decimal point position	0000000.	
F1.4	Zero track	OFF	
F1.5	Formula No.	01	Support 1 formula
F1.6	Delay display time	0.0	Display after finishing feeding mainly
F1.7	Motion detect	1d	
F1.8	Digital filter	3	
F1.9	Zero range	5%	F1.01 set 5% of the maximum capacity
F1.10	Zero power on	0%	F1.01 set 0% of the maximum capacity
F1.11	Display rewrite rate	15	
F2.1	Start automatic wait timer	0.5 second	
F2.2	Start tare wait timer	0.5 second	
F2.3	Coarse feed interrupt time	0.5 second	
F2.4	fine feed interrupt time	0.5 second	
F2.5	Allow error detect time	3.0 second	
F2.6	Discharge relay close time	2.0 second	
F2.7	Allow error range	0.2%	Set 0.5% of batching target weight
F2.8	Discharge zero range	1.0%	Set 0.5% of batching target weight
F2.9	Automatic compensation times	01	
F2.10	Over error detect times	01	
F2.11	Allow automatic tare	01	
F3.1	Output format select	1	Longtec command format
F3.2	Parity and send	0	Send no parity
F3.3	Baud rate select	9600	
F3.4	Communication bits character select	0	8 bit character, no parity
F3.5	ID code	00	
F3.6	Customer order format select	00	All the above set is valid

Chapter 5 FORMULA SETTING

◆ **5-1** FORMULA BATCHING PROCESS DESCRIPTION

In general, the batching is the processes from the start to finishing discharge of the hopper. There are six material substance sequence batching process. After starting batching, there are coarse feeding and fine feeding processes, for every material substance. Refer to the following graph.

A.　When the display value reach to the coarse feeding weight, F1 feeding valve closed, full fill gate was closed by F1 output signal control.

B．When the display value reach to the fine feeding weight, F2 feeding valve closed, dribble fill gate was closed by F2 output signal control.

C．after relay detecting over total error, UNI800C will detect over total error, if the net weight over allow total error（TOL 0.1%-9.9%）,the over total error output　gate will be start for about 0.5 seconds.

D.　Material substance 2,3,4,5,6 will be started according the above sequence.

E.　Discharge output　（RS232/RS485 automatic way or continuous way）

F.　Discharge output gate was going on start, till the gross weight less than zero range, discharge output valve was closed after the discharge control relaying.

G.　Preparing for the next batching.

　　Note: when receive the start signal, anytime receive the abandoning signal :material ,coarse feed, fine feed　,output will close, the batching finished, and output data signal.

　　◆　Note:

1．Any set and formula function should not be up in the batching process.

2．When there is interrupting signal, input command through RS232/RS485 (refer to the protocol), or press

the **FUNC** key and **MODE** key at the same time.

Fine feed weight

Actual weight

Coarse feed weight

Target weight

Discharge

Start

Actual net weight

2000

（1000-30） 970
（1000-50） 950

2% By the zero range

Material 1 （m1）

Material 2、3、4、5、6

Full fill （f1）

Dribble fill （f2）

Discharge （dis）

Total over limit （tol）

Data output

Start

SWT   DWT   DWT   DCWT

Figure: Batching sequence graph

Chapter 5   FORMULA SETTING
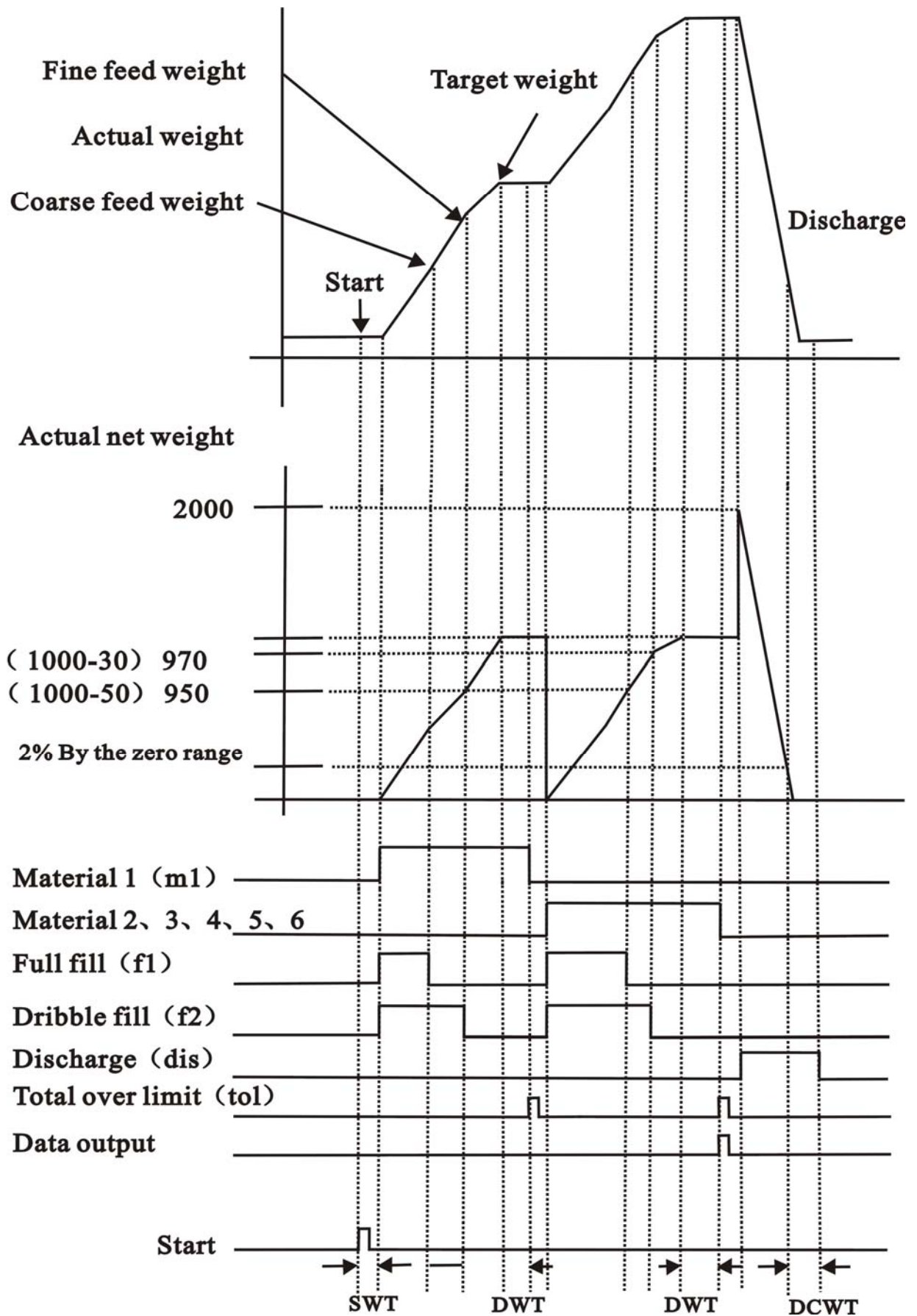
◆ **FORMULA BATCHING PROCESS DESCRIPTION**

➢ Start signal: there are two start way, 1:the pulse signal finish starting   need 0.1seconds,(just as showing in   the above graph), this is the intermittent batching process, i.e., one pulse batches once, the next batching process must be started by sending another pulse signal;2. chronic start signal finishing batching process, this is the continuous batching process. i.e., after finishing   the first batching process, the next batching process start automatically, then completing the batching process automatically.

➢ Feed valve 1（F1）: when the start is valid, the coarse feed batching start, it closed automatically when reach to the coarse feed closing point.

➢ Feed valve 2 （F2）: when the start is valid, both the coarse feed batching and the fine feed batching start, it closed automatically when reach to the fine feed closing point.

➢ Over total error output: after detecting over total error, if the function allow （F2-08 set）,at the same time this batching total error must out of the total error range, there will be output, the output pulse width is 0.5 second. There will not be pulse output if the batching result in the total error range.

➢ Data output :the control will output the whole batching data via the serial terminal after finishing batching, to read ,store or print for the host computer.

➢ Switch signal for material (M1-M6): when batching some material, the material signal is on automatically.

◆**note: the start signal is valid   in the case of, 1: in the case of set menu; 2.in the case of that all the target weight of the material is zero. The customer should note the two cases.**

5-2 THE TIMER OF BATCHING PROCESS

Start Delay time（SWT）

There lies once during every batching process.

When the discharge gate is enable, because of machinery effect, the hopper will vibrate for a while, to change the display weight at zero position. The delay time can be added here（SDT）.when the control receive the start signal , it start to batch after delay （0.0~9.9 second）.

The timer set in function F2-01.

Comparison inhibitor wait timer（TIC）:

There lies two times during every batching process of every material.

When preliminary feed to hopper and end feeding, because of the material impacting and stopping sharply, the hopper can vibrate, to cause the display weight in instability. The instability weight may more than the set target weight, then the terminal weighing control regard as it has reach to the target weight.(special the hopper is light). So the terminal weighing control inhibit the display weight comparing to the set target weight during the preliminary feeding and after ending feeding, in order to avoiding the vibration disturbance during the time.

The timer set in function   F2-03 and F2-04.

Detect wait timer（DWT）

There lies once during every batching process of every material.

In order to avoiding the possibility disturbance, the terminal weighing control   record the material and over total error test after delaying for a while   finishing feeding some material. To ensure the material record and over total error test is be done in the weight stability.

The timer set in function   F2-05.

DELAY CLOSE DISCHARGE TIME（DCWT）

There lies once during every batching process of every material.

All the material need to be discharged totally after the material be weighted, in theory the display number of the indicator should be returned to zero after discharged totally, and the discharge valve closed after the zero displayed. but ,sometimes ,the indicator can not be in zero display actually,(such as the material adhere), so we can deal with :first set a zero range（F2-08 set）,during the discharging ,when the remain material in the hopper lower than the zero range, the indicator begin to account, then delay for a while （TDC）and   close the discharge valve ,doing this to ensure the material be discharged totally.

The timer set in function F2-06.

◆allow total error range: During the batching process set a allow total error range, mainly used in over total error alarming and total error amending automatically.

5-3 FORMAT SETTING DESCRIPTION

Batching menu	Description	Note
PX 01	Formula No. select （1～8）	The UNI800C can storage 8 formula witch can be hold even power off. Any of formula can be selected to use and update.
[**M1**]light is on	Set material 1	[DISCH] light is on : Target weight [ZERO] light is on : Full fill weight [MOTION] light is on : Fine fill weight
[**M2**] light is on	Set material 2	Just same as the above.
[**M3**] light is on	Set material 3	Just same as the above.
[**M4**] light is on	Set material 4	Just same as the above.
[**M5**] light is on	Set material 5	Just same as the above.
[**M6**] light is on	Set material 6	Just same as the above.

◆   Note:

1) The material was feed to a special weight (the weight =target weight-coarse feed weight) by full flow (open the discharge valve 1 and the discharge valve 2 at the same time),

2) Then start the fine feed (Dribble flow) (close the discharge valve 1, and keeping the discharge valve 2 opening) to the weight (Target weight-Dribble flow weight), then UNI800C close the discharge valve 2.

3) There is a free fall during the discharge valve closing and the hoper turn into the stability status, then the control regard it as the preliminary to compensate next time. For example: when the target weight is 100kg,but the fall weight is 1.5KG,then the UNI800C will close the discharge valve when the weight arrive at 98.5kg.the preliminary of all the material can be set by hand, or automatic calculate during batching process by the UNI800C.

4) If a material's target weight is set as 0, then the material is closed automatically (the material not be batched in the batching process), UNI800C will skip the corresponding material and enter to the next material's batching process directly.

5) when set the function: Target weight＞Full flow weight ≥ Dribble flow weight ≥ 0;

6) During batching process, if you want to use the formula setting, then you can not carry out the whole batching process.

Chapter 5 FORMULA SETTING

5-4 OPERATION

A. In weighing mode, press the ⬆️ TARE key to select "SET -P", press the ➡️ ZERO key to enter the secondary menu;

B. In the formula setting menu, press the ⬆️ TARE key to select "PE1——PE8", press the ➡️ ZERO key to enter setting menu; In the Weighing mode, press the ⬆️ TARE key to the first menu, then press the ⬆️ TARE key, UNI800C will display "**SET-P**" in the upper window.

C. Press the ➡️ ZERO key to select formula submenu, now display "**PE1**" in the upper window, it indicates that the first formula will be updated; press the ⬆️ TARE key to select the formula "**PE1 to PE8**".

D. Press the ➡️ ZERO key to enter the menu which the need updated, the upper widows display "**PEX—01**" indicate the formula number（**X=0……8**）will be updated; the lower display the data, the blink bit indicate the amended number; press the ⬆️ TARE key to move the blink bit, press the ⬇️ MODE key to change digit from "**0—9**" in circle, the number add 1 automatically by every pressing the ⬇️ MODE key once.

E. There are three data can be update of each material; that are the Target weight, the Full flow weight, Dribble flow weight. When operating , every data is corresponding to a Illuminated:

   [DISCH] light is on   : Target weight

   [ZERO] light is on   : Full fill weight

   [MOTION] light is on   : Fine fill weight

F. When you want to exit the formula setting, press the ⏹️ FUNC key to return to the previous submenu and the formula will be stored, it is not be renewed until the next update operation.

Chapter 6 CALIBRATION

6-1 DESCRIPTION FOR CALIBRATION

A. In non-batching mode, press the ⬆ TARE key to select "**SET -C**", press the ➡ ZERO key to enter to the secondary menu, display "**CAL1**";

B. In the secondary menu, press the ⬆ TARE key to select "**CAL1 or CAL2**", press the ➡ZERO key to enter to set menu;

C. During the whole set process, press the ⬛ FUNC key, then it can not store the function and return to the previous menu; return to the normal weighing mode after finishing calibration.

D. "**CAL 1**" is the two point maximum capacity calibration; "**CAL 2**"is the single point zero calibration. The detail is just as the following:

6-2 ZERO/MULITIFIER/ MAXIMUM CAPACITY CALIBRATION

Batching menu	Description for the menu	Note
C1 01	Calibration way	the two point maximum capacity calibration
C1 01	Zero input	The lower display "000000"and blink continuously; Keep the scale empty load, press the ➡ ZERO key to confirm and enter to the next zero sampling confirmation.
C1 02	Zero calibration confirmation	The lower display"……" during confirming zero relay, enter to capacity calibration automatically after confirming.
C1 03	Capacity input	The lower display "000000", now the amend bit is blink, ⬆ TARE key move the bit in circle; ⬇ MODE amend number; now some poise should be added, input the corresponding value in the lower display window, press the ➡ ZERO key to confirm and enter to capacity confirmation during the scale stability status.
C1 04	span Capacity confirmation	The lower display "……" during capacity relay confirmation process, enter to terminal operation automatically after confirmation.
C1 05	**END**	Press the ➡ ZERO key to store the valid calibration data and return to weighing mode.

6-3 ZERO CABLIBRATION

Batching menu	Description for the menu	Description for operation
C2 01	Calibration way	Single zero calibration process
C2 01	Zero input	The lower display "000000" and blink continuously; Keep the scale empty load, press the ZERO key to store the valid calibrated data and return to weighing mode.

6-4 NOTE DURING CALIBRATION

A．In order to decrease all kinds of total factors which lead to inaccuracy of calibration, the UNI800C should be power on for 15-30 minutes before calibration.

B．The hoper should be keep stability during zero sampling and capacity sampling confirmation; otherwise there will possibility errors in calibration.

C．When calibrate capacity magnifying point, the input value must more than 100 divisions, or there will be error during calibration, the error during calibration refers to the following charter.

D．In the case of one scale connect with some load cell in serial, it should be done corner adjusts. the adjust way is: first, finished two point capacity calibration, second offset the poise to all the load cell, third recorded the display value of the indicator, after that, every item tested value   compare with the calibration capacity value. It need not be adjusted if there is little total error; or the corner potentiometer of the junction box need to be adjusted; the recalibration should be done until the corner total error in the total error range (the total error range decided by the customer). Besides, the linearity test should be done after calibration. The test way: share the poise that you just used, add one by one, if the actual weight does not company with the display weight, you need find the reason and resolve the problem.

E．There are two functions according to the single point:

1. There will be zero drift because of all kinds of factors after the scale running for a while, then the customer can calibrate zero without the poise;

2. It is inconvenient to install the poise for some scale (for example the scale is in the air), then the customer can extend the scale to the ground by the hoist cable, and add a scale, the two point capacity calibration can be done. After finishing it, loose the added scale section, completing the whole calibration by adopting the single zero calibrating.

6-5 THE ERROR CODE

Error code	description	Resolution
DISP-L	Input signal＜0.05mV or negative signal; error wiring or loosing	Readjust the wiring of the load cell
DISP-H	Input signal ＞ 30mV; error wiring or loosing	
ERROR1	Division mismatches the max. capacity	Reset division or the max. capacity
ERROR2	The voltage of the span calibration point is negative with respect to the zero point	Confirm the connection of the load cell and recalibration
ERROR3	Input voltage too low, the hoper too light	Add a 50k-500K resistance of 1% precision between EX+ and SG+
ERROR4	Input voltage too high, the hoper too heavy	Add a 50k-500K resistance of 1% precision between EX+ and SG-
ERROR5	Sensitivity of the load cell is insufficient	Change the load cell or reduce the accuracy
ERROR6	The output voltage of load cell is too large at the max. capacity	Recalibration

Chapter 7 I/O INTERFACE

The input terminal description in this chapter is not often used in all UNI800C; the details refer to the interface graph in the front section of this chapter. The batching starting signal is not valid until START short circuit with COMC terminal for 100ms. It is valid during the sequence from batch starting to ending the batching.

The connect cable is less than 5 m from the input terminal to the external equipment, it is recommend that the cable is far away from the AC power cable and the other power cable.

The input is switch input or TTL electric level

7-1 CONTROLL I/O

Output	Description	Note
M1	The first material batching output	
M2	The second material batching output	
M3	The third material batching output	
M4	The fourth material batching output	
M5	The fifth material batching output	
M6	The sixth material batching output	
DIS	Discharging output	Open Collector output (max. 50VDC/0.3A)
TOL	Over limit out put	
F1	1# feed gate output	
F2	1# feed gate output	
ComB	Output Com	
Start	Batching start input	
ComC	Input Com	

◆　Note:

It is recommends that the cable is far away from the AC power cable and the other power cable.

◆ INPUT CIRCUIT

V+ (DC) supply in the figure blow is supplied by UNI800 itself, extra power should not added to the output PLC.
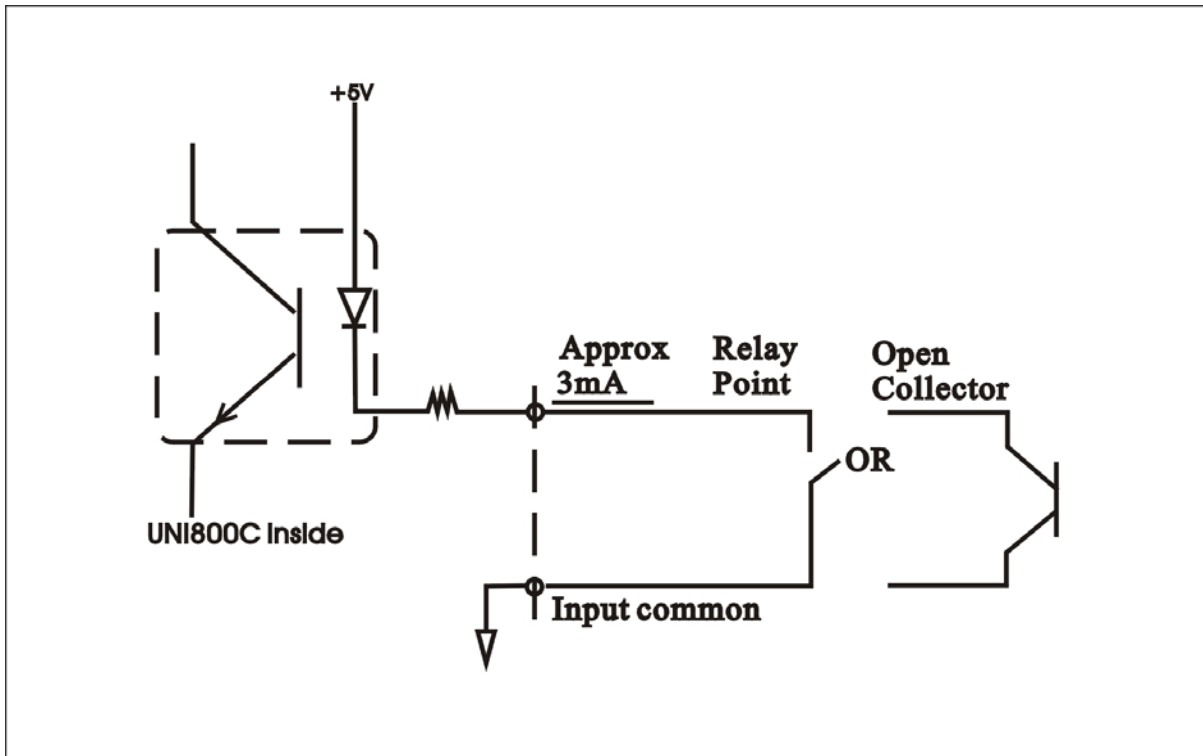
Note:

Input contact adopting passive switch, the short circuit time is no less than 30 milliseconds.
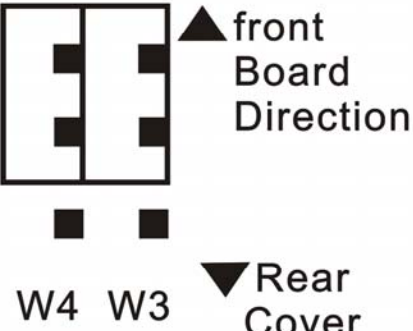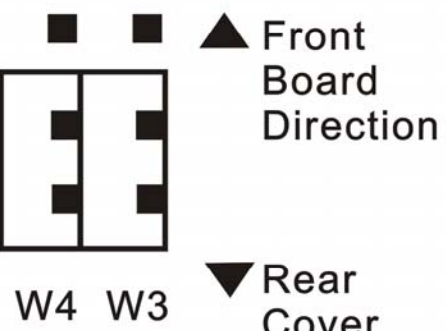
◆ **OUTPUT CIRCUIT**
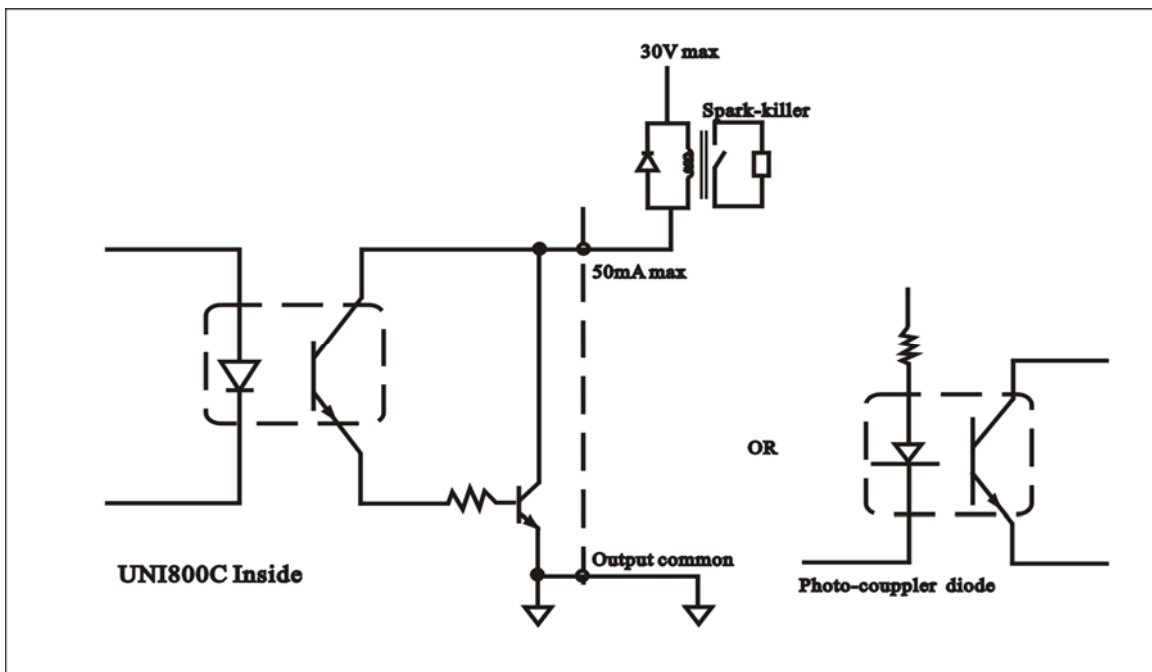
Note: 1. Use external power source (up to DC 30V, 50mA) for driving relay.

2. Don't short-circuit the load, such as a coil of relay that will break the out put transistor.

3. 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.

7-2 SERIAL COMMUNICATION INTERFACE

UNI800C has two types serial communication interface port: only one of RS232 or RS485 can be used.

Connection Terminal Sign	RS-232 Communication	RS-485 Communication
	Jointing device space In the main circuit ▲front Board Direction W4 W3 ▼Rear Cover Direction	Jointing device space In the main circuit ▲Front Board Direction W4 W3 ▼Rear Cover Direction
RXD/485B	RXD（RS-232receive）	485B
TXD/485A	TXD（RS-232send）	485A
GND	Sign ground	Vacancy

The UNI800C's communication interface type is RS232 as default set; it can be changed to RS485 by change the switch W3&W4, Ensure the communication interface type before connection.

There are two types communication mode: single UNI800C to one host serial port & multi-UNI800C to one host serial port.

7-2-1 RS—232 SINGLE UNI800C CONNECTING EXAMPLE:
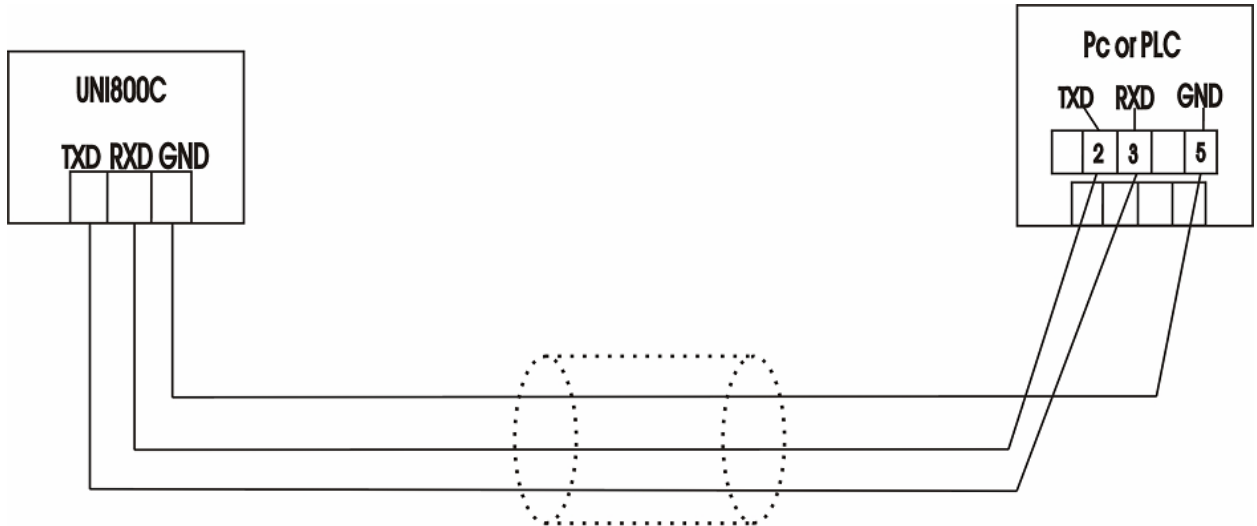
Cable short than 15m

7-2-2 RS—232 MULTI UNI800C CONNECTING EXAMPLE:
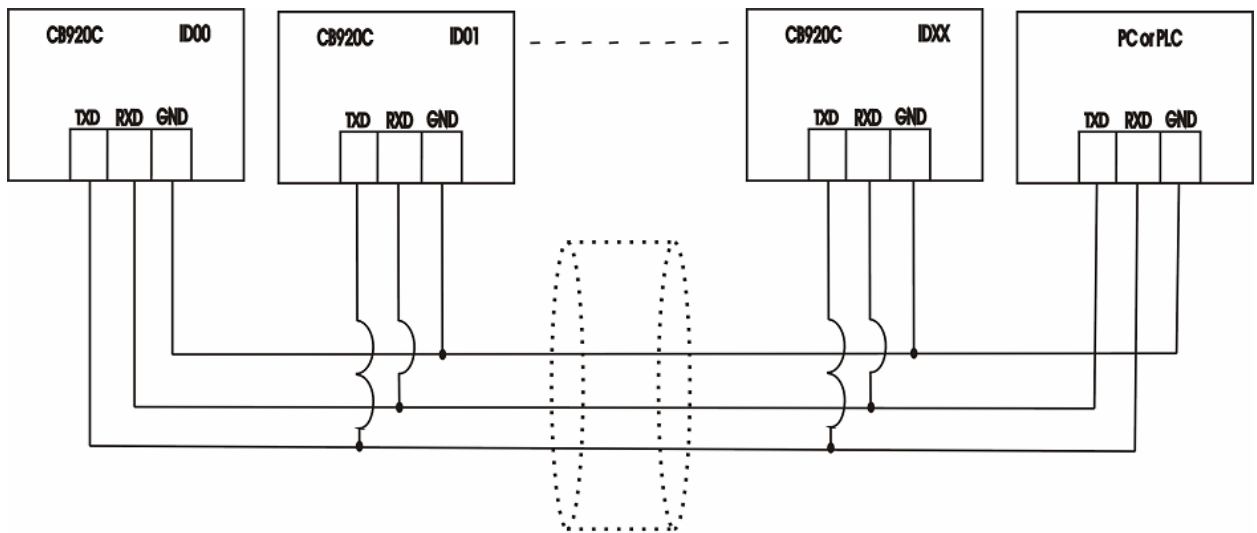
Multi UNI800C (up to 16 units) connecting by RS 232; Cable short than 15m

◆ Note：Normally RS232 can be connect single host to single slave only, but user can connect multi indicator UNI800C to one host refer to the figure as RS485; but ensure the cable short than 15m, no more than 16 UNI800C connect to the same host.

7-2-3 RS—485 MULTI UNI800C CONNECTING EXAMPLE:
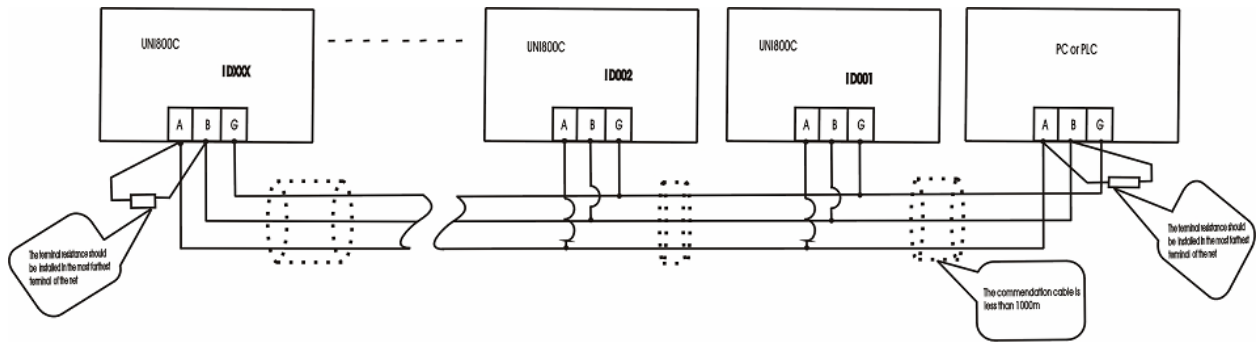
7-2-4 PROTOCOL FOR SERIAL RS232/RS485

UNI800C have the LONGTEC Protocol only. Just as flow:

- ◆ Data bits   =8
- ◆ Parity bits   =1（even）
- ◆ Code used   =ASCⅡ code
- ◆ Baud rate   =2400(/4800/9600/19200/38400) bps (refer to F3-03)
- ◆ Address   =00~15 (RS232)/000~127 (RS485) (refer to F3-05)
- ◆ Terminator   =CR/LF

● Communication mode:

Data transfer mode：

Command mode   ：The host computer (PC or PLC) send commands, UNI800C responds with a result; usual used in single host to multi UNI800C.

Data format：

There two types format commands from host computer to UNI800C：

A．Reading the data of UNI800C：sends four bits, as：B0, B1, B2, B3

The command data description as flow：（all bits are in Hex）

B0   Address data: from A0H—AFH (16 address, refer to UNI800C's F3.05 set, from 00-15） this is the header bits

B3 The data format end bits, CAH。

B2 The operate address, description as flow：

00H Read the batching batch   （A0H, 00H, 00H, CAH）
01H Read the first material batching data   （A0H, 00H, 01H, CAH）
02H Read the second material batching data   （A0H, 00H, 02H, CAH）
03H Read the third material batching data   （A0H, 00H, 03H, CAH）
04H Read the fourth material batching data   （A0H, 00H, 04H, CAH）
05H Read the fifth material batching data   （A0H, 00H, 05H, CAH）
06H Read the sixth material batching data   （A0H, 00H, 06H, CAH）
07H Read the total batching data   （A0H, 00H, 07H, CAH）
08H Read the displayed value   （A0H, 00H, 08H, CAH）
09H Start batching   （A0H, 00H, 09H, CAH）
0AH Stop batching   （A0H, 00H, 0AH, CAH）

11H Read the first material's target data   （A0H, 00H, 11H, CAH）
21H Read the second material's target data   （A0H, 00H, 21H, CAH）
31H Read the third material's target data   （A0H, 00H, 31H, CAH）
41H Read the fourth material's target data   (A0H, 00H, 41H, CAH）
51H Read the fifth material's target data   (A0H, 00H, 51H, CAH）
61H Read the sixth material's target data   （A0H, 00H, 61H, CAH）

12H Read the first material's full flow data   （A0H, 00H, 12H, CAH）
22H Read the second material's full flow data   (A0H, 00H, 22H, CAH）
32H Read the third material's full flow data   （A0H, 00H, 32H, CAH）

42H Read the fourth material's full flow data　　（A0H, 00H, 42, CAH）
52H Read the fifth material's full flow data　　　（A0H, 00H, 52, CAH）
62H Read the sixth material's full flow data　　　（A0H, 00H, 62, CAH）

13H Read the first material's dribble flow data　　（A0H, 00H, 13, CAH）
23H Read the second material's dribble flow data　 (A0H, 00H, 23, CAH）
33H Read the third material's dribble flow data　　（A0H, 00H, 33, CAH）
43H Read the fourth material's dribble flow data　（A0H, 00H, 43, CAH）
53H Read the fifth material's dribble flow data　　（A0H, 00H, 53, CAH）
63H Read the sixth material's dribble flow data　　（A0H, 00H, 63, CAH）

B．Write to UNI800C：send 7 bits: B0, B1, B2, B3, B4, B5, B6

　　Data format description as flow:（All bits are in Hex）

　　B0　Address bits, from A0H—AFH total 16 addresses（refer to UNI800C's F3.05）

　　This is the header bits

　　B3, B4, B5 are the digital data（using compressed BCD code）。

　　B6 Data end symbol, always CAH。

　　B1 Write command, always 01H

　　B2 The operate address, description as flow：

11H Write the first material's target data　　　（A0H, 01H, 11H, XXH, XXH, XXH, CAH）
21H Write the second material's target data　　（A0H, 01H, 21H, XXH, XXH, XXH, CAH）
31H Write the third material's target data　　　（A0H, 01H, 31H, XXH, XXH, XXH, CAH）
41H Write the fourth material's target data　　（A0H, 01H, 41H, XXH, XXH, XXH, CAH）
51H Write the fifth material's target data　　　（A0H, 01H, 51H, XXH, XXH, XXH, CAH）
61H Write the sixth material's target data　　　（A0H, 01H, 61H, XXH, XXH, XXH, CAH）

12H Write the first material's full flow data　　（A0H, 01H, 12H, XXH, XXH, XXH, CAH）
22H Write the second material's full flow data　（A0H, 01H, 22H, XXH, XXH, XXH, CAH）
32H Write the third material's full flow data　　（A0H, 01H, 32H, XXH, XXH, XXH, CAH）
42H Write the fourth material's full flow data　（A0H, 01H, 42H, XXH, XXH, XXH, CAH）
52H Write the fifth material's full flow data　　（A0H, 01H, 52H, XXH, XXH, XXH, CAH）
62H Write the sixth material's full flow data　　（A0H, 01H, 62H, XXH, XXH, XXH, CAH）

13H Write the first material's dribble flow data　　（A0H, 01H, 13H, XXH, XXH, XXH, CAH）
23H Write the second material's dribble flow data　（A0H, 01H, 23H, XXH, XXH, XXH, CAH）
33H Write the third material's dribble flow data　　（A0H, 01H, 33H, XXH, XXH, XXH, CAH）
43H Write the fourth material's dribble flow data　（A0H, 01H, 43H, XXH, XXH, XXH, CAH）
53H Write the fifth material's dribble flow data　　（A0H, 01H, 53H, XXH, XXH, XXH, CAH）
63H Write the sixth material's dribble flow data　　（A0H, 01H, 63H, XXH, XXH, XXH, CAH）

Example：

Read the total batching data of the 5# UNI800C, send the command as flow:

　　　　A5H, 00H, 07H, CAH

Write the first material's target data 500 to the 0# UNI800C, send the command as flow:

　　　　A0H, 01H, 11H, 00H, 05H, 00H, CAH

Write the third material's dribble flow data as 123 to the 2# UNI800C, send the command as flow:

        A2H, 01H, 33H, 00H, 01H, 23H, CAH

Start the 8# UNI800C batching, send the command as flow:

        A8H, 00H, 09H, CAH

The data format responds from UNI800C:

  The data responds from UNI800C have 6 bits：D0, D1,D2, D3, D4, D5

  Description as flow：

    D0 Address bits, from AOH—AFH, total 16address (refer to F3.05）this is the header bits.

    D2 The first 4 bit is sigh flag, 0000（B）is positive sign；0001（B）is negative sign；

      The last 4 bits is decimal position, 0000（B）no decimals；0001（B）pointed off one figures；0010（B）pointed off two figures；0011（B）pointed off three figures；0100（B）pointed off four figures；（B）binary number；bit

    D3, D4, D5 are the detail data responds, responds 00H both start/stop command.

    D1 command data flag

00H Return the batching batch	（A0H, 00H, 00H, XXH, XXH, XXH）
01H Return the first material's batching data	（A0H, 01H, 0XH, XXH, XXH, XXH）
02H Return the second material's target data	（A0H, 02H, 0XH, XXH, XXH, XXH）
03H Return the third material's batching data	（A0H, 03H, 0XH, XXH, XXH, XXH）
04H Return the fourth material's batching data	（A0H, 04H, 0XH, XXH, XXH, XXH）
05H Return the fifth material's batching data	（A0H, 05H, 0XH, XXH, XXH, XXH）
06H Return the sixth material's batching data	（A0H, 06H, 0XH, XXH, XXH, XXH）
07H Return the total batching data	（A0H, 07H, XXH, XXH, XXH, XXH）
08H Return the NET weight display value	（A0H, 08H, XXH, XXH, XXH, XXH）
09H Return the batching start available signal	(A0H, 09H, 00H, 00H, 00H, 00H）
0AH Return the batching stop available signal	（A0H, 0AH, 00H, 00H, 00H, 00H）
11H Return the first material's target data	（A0H, 11H, XXH, XXH, XXH, XXH）
21H Return the second material's target data	（A0H, 21H, XXH, XXH, XXH, XXH）
31H Return the third material's target data	（A0H, 31H, XXH, XXH, XXH, XXH）
41H Return the fourth material's target data	（A0H, 41H, XXH, XXH, XXH, XXH）
51H Return the fifth material's target data	（A0H, 51H, XXH, XXH, XXH, XXH）
61H Return the sixth material's target data	（A0H, 61H, XXH, XXH, XXH, XXH）
12H Return the first material's full flow data	（A0H, 12H, XXH, XXH, XXH, XXH）
22H Return the second material's full flow data	（A0H, 22H, XXH, XXH, XXH, XXH）
32H Return the third material's full flow data	（A0H, 32H, XXH, XXH, XXH, XXH）
42H Return the fourth material's full flow data	（A0H, 42H, XXH, XXH, XXH, XXH）
52H Return the fifth material's full flow data	（A0H, 52H, XXH, XXH, XXH, XXH）
62H Return the sixth material's full flow data	（A0H, 62H, XXH, XXH, XXH, XXH）
13H Return the first material's dribble flow data	（A0H, 13H, XXH, XXH, XXH, XXH）
23H Return the second material's dribble flow data	（A0H, 23H, XXH, XXH, XXH, XXH）
33H Return the third material's dribble flow data	（A0H, 33H, XXH, XXH, XXH, XXH）
43H Return the fourth material's dribble flow data	（A0H, 43H, XXH, XXH, XXH, XXH）

53H Return the fifth material's dribble flow data   （A0H, 53H, XXH, XXH, XXH, XXH）

63H Return the sixth material's dribble flow data   （A0H, 63H, XXH, XXH, XXH, XXH）

Example：The return data witch respond the four commands send in the previous example as flow:

    Read the 5# UNI800C's total batching data, return as flow：

        A5H, 07H, XXH, XXH, XXH, XXH

    Write the first material's target data 500 to the 0# UNI800C, return as flow：

        A0H, 11H, XXH, 00H, 05H, 00H

    Write the third material's dribble flow data as 123 to the 2# UNI800C, return as flow:

        A2H, 33H, XXH, 00H, 01H, 23H

    Start the 8# UNI800C batching, return as flow:

        A8H, 09H, 00H, 00H, 00H, 00H

◆   Note：It's need not to add decimal position signal while write data to the UNI800C, UNI800C will add the decimal position automatically according to the setting; However, the data return to the host computer have the sigh flag and the decimal position signal.

7-2-5 Note

A．While multi-UNI800C connecting to one RS232/RS485 port, set the address different from another.

B．All UNI800C's communication setting should be set the same except the address.

C．While work in the one host to multi-slave mode, ensure the pitch time large enough, normally transfer a single data packet use 20ms (based on 9600 baud rate), user must set the time period.

D．While work in the host inquire mode, ensure the return date is correct, you should use time out processing, and you can dropt the incorrect data and inquire again.

E．Other condition should be considered.

7-3 ANALOG OUTPUT (OPTION)

AN-   negative electrode for analog output
AN+   positive electrode for analog output

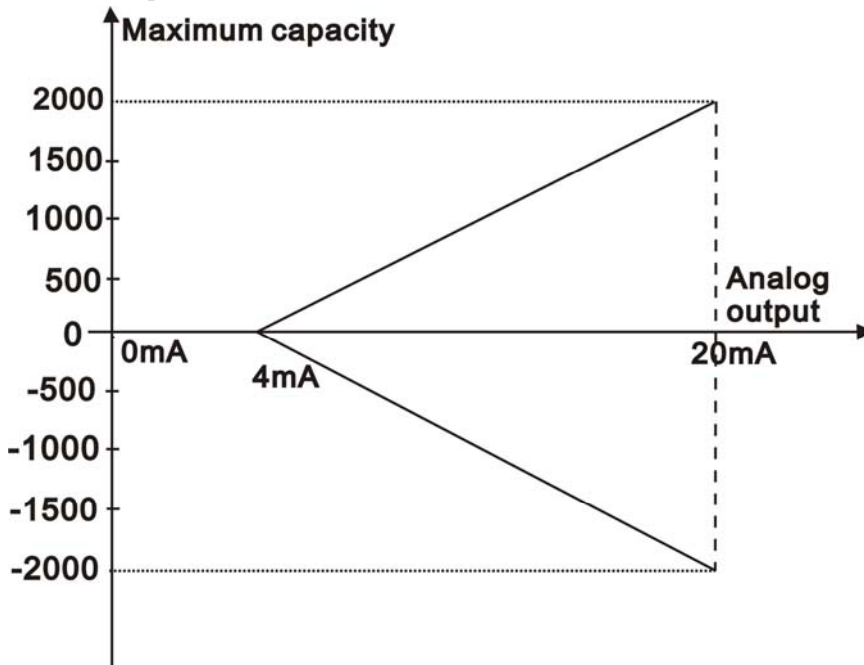◆ SPECIFICATION

Resolution   : 1/10000

Accuracy   : 0.5%FS

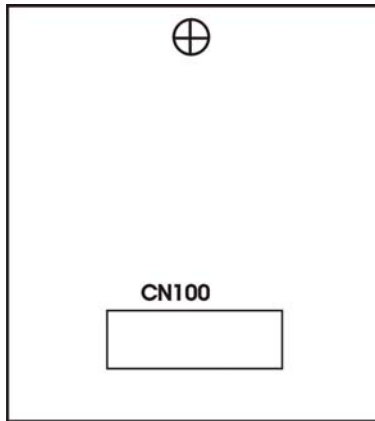| Output	0～5V	0～10V	4～20mA
Load resistance	Minimum 1KΩ	Minimum 1K	Maximum 500Ω
Output voltage/current when the display value is zero	0V	0V	4mA
Output voltage/current when the display value is the maximum capacity	5V	10V	20mA

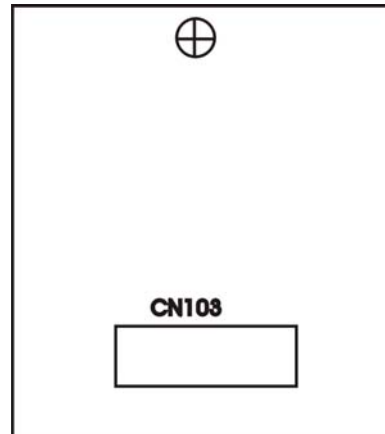◆ EXAMPLE FOR ANANLOG OUTPUT
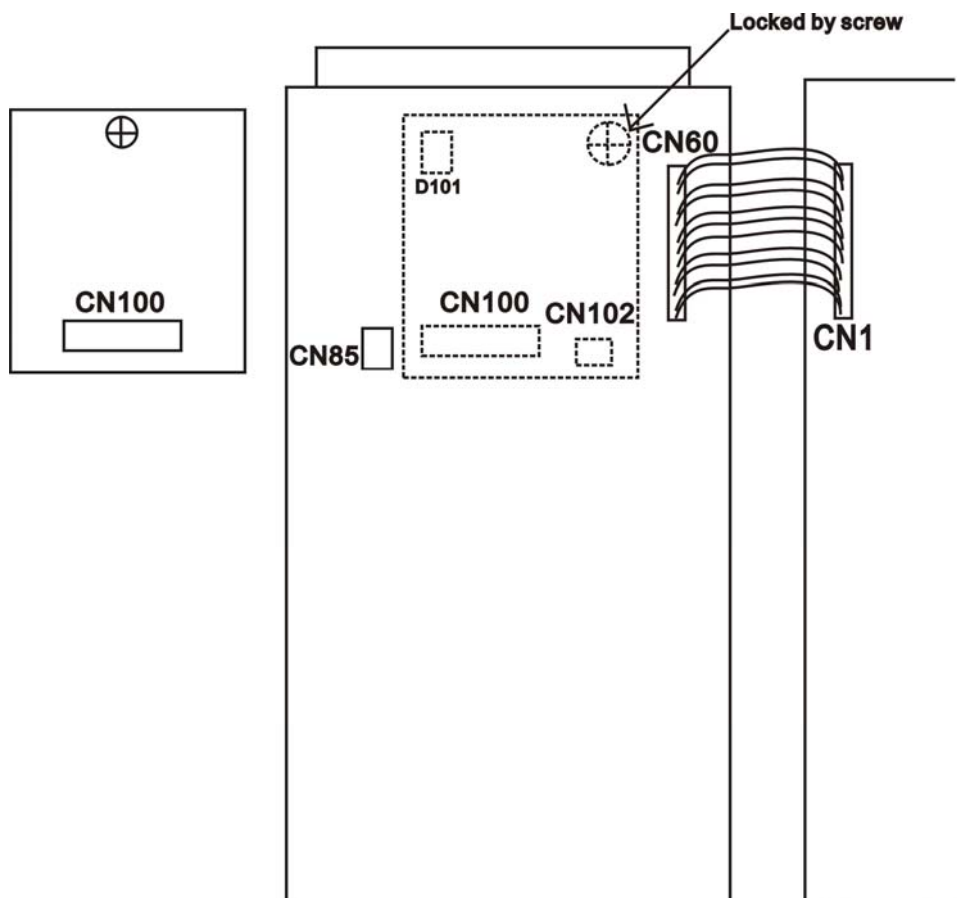Maximum capacity: 2000
Output: 4~20mA

◆ ANALOG OUTPUT BOARD

4~20mA/0~20mA analog board

0~5V analog board

◆ ANALOG BOARD INSTALLING

Chapter 8 RECORD

	Chapter 8 RECORD	

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