R30

Electronic Weighing Indicator

Technical/User Manual

warning

1、this product is precision measure equipment, make sure equipment is properly grounded before use.
2, only authorized person is allowed to debug, test and maintain system.

caution

Observe precaution for handling electrostatic sensitive devices.

Content

1 Attentions

Thank you for choosing R30 Electronic Weighing Indicator. For proper application please read this manual carefully before installation.

Check the package is well and make sure the package contents is comply with the packing list.

Check the product model and type is accordance with your order. The product model information is on the label brand above the enclosure.

If there is any parts missed, broken, or model inconformity in new carton, please prepare the evidence (such as order No., the date of receive goods, product serial No.) and contact our branch office, authorized agency, or KELI service department to deal with.

Ground connection: to ensure the measuring performance and prevent shock hazard, the terminal must be well grounded.

Power supply: This terminal is powered by universal switch power. Rated power supply voltage 24~28VDC, current less than 200Ma, Separate the power supply with any motor driven equipment.

Environment: R30 is not an intrinsic safe terminal and can not be used in hazardous area of explosive dust and gas directly.

1 Function & Features

R30 weighing indicator specially used for fixed data weighing, several bulk material batching during industry control。This terminal is a weighing control expert on packing scale, drum-filling scale, bulk weighing system, dosing and batching applications which widely suitable for such as metallurgy, chemical industry, construction material industry, painting, cereal & feed, beverage, and in/out port etc. industrial fields.

R30 main features：

- Compact panel enclosure and easy-mount structure
- Build-in mixed batching and recycles batching.
- Four material batching control independently.
- Store 10 recipes.
- 24 bits high resolution SIGMA-DELTA AD, 100 Hz effective output rate drop automatically corrects.
- Automatically spill correct
- Automatically accumulate and error analysis
- 12 opt coupler relay output, 3-way redundancy freely defined.
- standard isolated RS232 / RS485 connection
- support MODBUS RTU connection
- original German terminals
- Semi-automatic mode can support feeding randomly.
- Work as setting data

2 MODEL & TECHNICAL SPECIFICATIONS

2.1 MODEL

MODEL	Order num	description
R30.20	24220002	Four material batching;4 inputs12 outputs; RS232/RS485, DC24V
R30.00	24220003	One material setting control, 1 input,4 output,RS232/RS485 DC24V

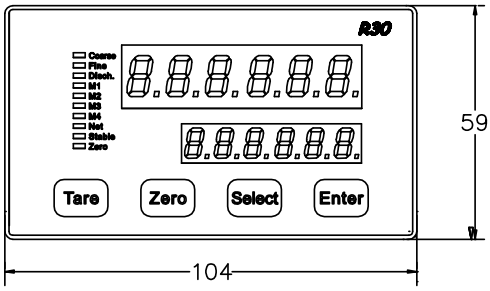
2.2 Technical specification

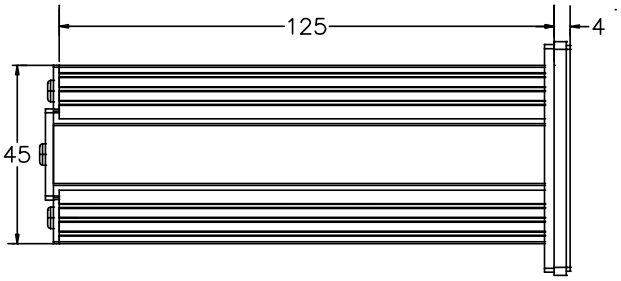
Dimensions(WxHxD)	104mm x 59mm x 142mm
weight	0.5kg
panel	Front panel：SS304，IP65；panel material：aluminum，IP42。
Load cell connector	Max 6pcs 350Ωload cells, or load with impedance bigger than58Ω. Input signal：-20mV ~ +20mV。
A/D conversion	24 bits high resolution∑-Conversion with 100 Hz sample rate.
Resolution	Maximum display resolution：20000d，Minimum sensitivity 0.3μv/d。
display	Up display：6 red LED digital tube，word: 10.3mm； Down display：6 green LED digital tube，word 7mm； Display refresh：10Hz；
Key board	4 membrane keys
Switch input	Max 4 optical electric isolation input settings.
Switch output	Max 12 isolated opt coupler relay output settings, load capacity 30VDC/200mA。
communication	Isolated RS232 or RS485，terminal shared, internal jumper is optional..
protocol	Continuous output format, print output, MODBUS-RTU。
Application models	R30.20：1、four materials mixed model；2、four materials recycle model。 R30.00：1、single material fixed data control；2、fixed reduction control.
store	10
Power supply	20–28 VDC，<200mA
Working environment	temp：–10° ~ +40° C；humidity： 10% ~ 90%, non-condensing.
Store environment	temp：–30° ~ +60° C；humidity： 10% ~ 90%, non-condensing

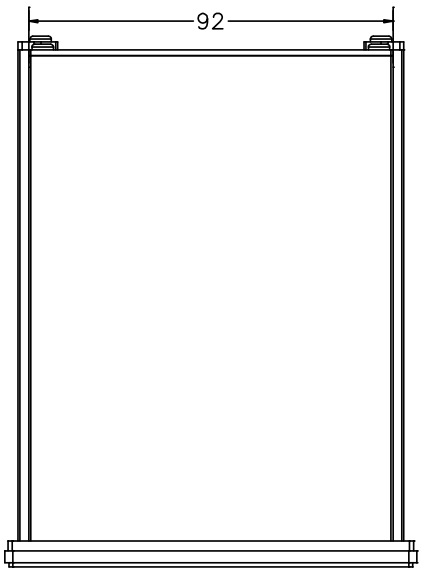
3 Installation and Connection

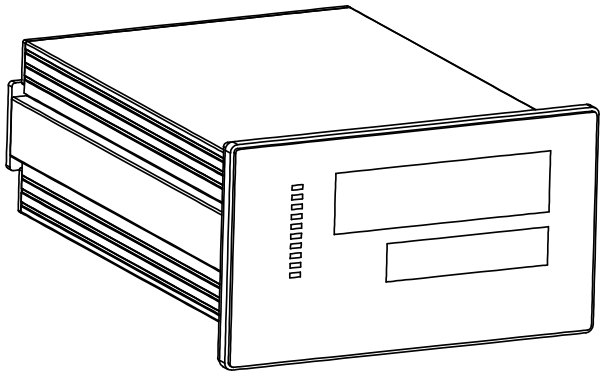
3.1 Installation

Front panel size(W x H)：104mm X 59mm。
Enclosure size (W x H): 92mm x 45mm。
Cut out size：93mm X 46mm。
diagram（unit: mm）：



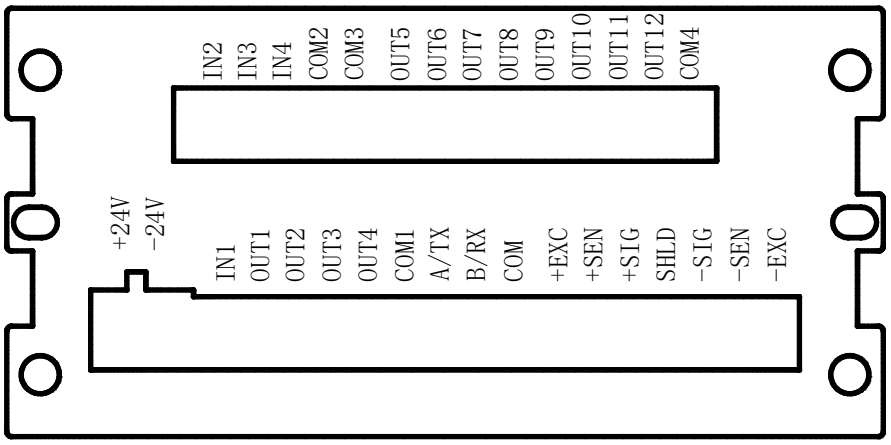




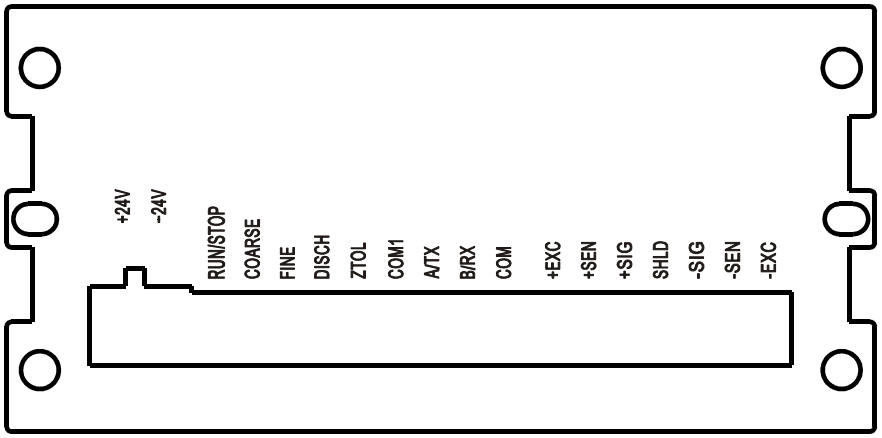


3.2 Wire connection

R30.20 back plate connection drawing



R30.00 back plate connection



4.2.1 Power supply

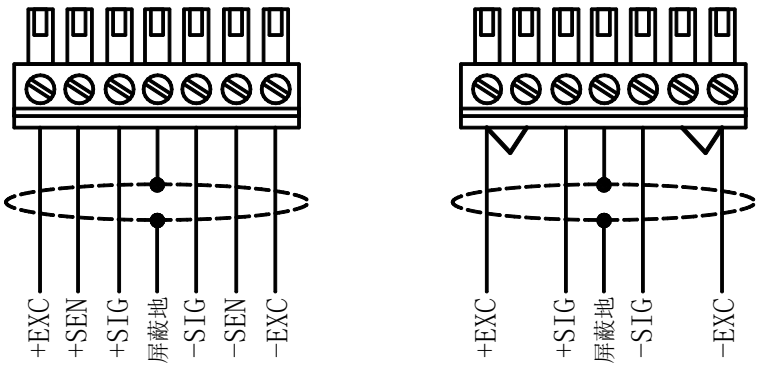
R30.XX is powered by a universal power supply that operates 20~28V。Power supply connects to +24V and -24V terminals, never share same power supply with motor, relay, heater…high voltage equipments..

Pin definition listed as below：

pin	description
+24V	Positive power
-24V	Negative power

4.2.2 Load cell connection

R30 is connected with max 6 pcs load cells of 350 ohms,(or load of 58 ohm). Wire connections as below. When connecting 4 wires load cell, connect +EXC and +SEN,–EXC and–SEN.



Terminal	Description	4 wire	6 wire
+EXC	Positive excitation	Red	Red
+SEN	+Sense terminal. short with +EXC if connecting 4 wire cell	-	blue
+SIG	positive signal	green	green
SHIELD	shield ground		
-SIG	negative signal	White	white
-SEN	-Sense terminal. short with -EXC if connecting 4 wire cell	-	yellow
-EXC	negative excitation	Black	black

4.2.3 series port

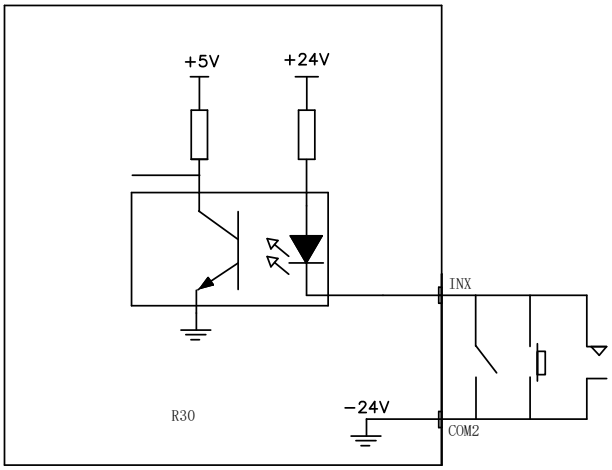
That indicator has isolated series ports, R232 & R485 share same terminals..

pin definition	description
A/TX	RS232 transmit data，RS485 A port
B/RX	RS232 receive data，RS485 B port
COM	Common ground

If two ports can not use together, then change internal jumper position to choose.

4.2.4 Switch input

Indicator has 4 inputs（R30.00 only has one "RUN/STOP"）. Input wire diagrams:



■ Input terminal definition under auto batching models.（R30.20 parameters F6.6=0，F6.7=0）

Input	Definition	Instruction
IN1	Batching control / start	Auto-batching start 100 millisecond after connecting to COM2, and stop when un-connect to COM2.
IN2	Over-weight accept ion/ start	Batching stop or over weight stop, 100 millisecond after connects COM2, indicator restart batching process.
IN3	Batching stop control	100 milliseconds after connect to COM2, weighing stop batching process, and keep stopping when it un-connect to COM2, only use IN2 to restart the batching processing. Note: when IN3 connecting to COM2, weighing keep stopping, only Mandatorily can stop batching, other operations can not make weighing out of batching process. Under stopping IN3 manually discharging material.
IN4	Mandatorily stop batching	100 milliseconds after connect to COM2, weighing stop batching process, and keep stopping when it un-connect to COM2, when connect to COM2, it keep stopping batching, no other operation can restart batching.

■ Input terminal definition under auto feeding, semi-auto feeding, semi-auto discharging models.(R30.20parameters F6.6=0，F6.7=1）

Input	Definition	instruction
IN1	Batching process control	100 milliseconds after connect to COM2, weighing terminal start next batching process, when un-connect to COM2, weighing terminal wait for discharging after finishing current batching process. When weighing terminal finish feeding, 100 milliseconds after connect to COM2, it start discharging,, when un-connect, it stop after finishing current discharging. Note 1: under that model, a full batching process includes 2 batching processes, can use IN0 start each process. 2: if keep connecting to COM2, weighing terminals keep auto-batching recycled.
IN2	Over-weight accept ion/ start	Batching stop or over weight stop, 100 millisecond after connects COM2, indicator restart batching process.
IN3	Batching stop control	100 milliseconds after connect to COM2, weighing stop batching process, and keep stopping when it un-connect to COM2, only use IN2 to restart the batching processing. Note: when IN3 connecting to COM2, weighing keep stopping, only Mandatorily can stop batching, other operations can not make weighing out of batching process. Under stopping IN3 manually discharging material.
IN4	Mandatorily stop batching	100 milliseconds after connect to COM2, weighing stop batching process, and keep stopping when it un-connect to COM2, when connect to COM2, it keep stopping batching, no other operation can restart batching.

■ Input terminal definition under auto-feeding model（R30.20 parameters F6.6=1，F6.7=0 or 1）

Input	Definition	instruction
IN1	Batching menu selection	Connecting to COM2 100 millisecond, then cut, weighing terminal display next menu concerning batching process. Note: under that model do not always connect to COM2.

IN2	Batching menu run stop / restart	When weighing terminal finish feeding, connect to COM2 100 millisecond, then cut, it run current menu. Note: under that model do not always connect to COM2.
IN3	Batching stop control	100 milliseconds after connect to COM2, weighing terminal stop current batching, when un-connect to COM2, it keep stopping until restart by IN2. Note: when IN3 connecting to COM2, weighing keep stopping, only Mandatorily can stop batching, other operations can not make weighing out of batching process. Under stopping IN3 manually discharging material.
IN4	Mandatorily stop batching	100 milliseconds after connect to COM2, weighing stop batching process, and keep stopping when it un-connect to COM2, when connect to COM2, it keep stopping batching, no other operation can restart batching.

Note: R30.00 has only one "RUN/STOP" Input，100 millisecond after connecting to -24V, weighing terminal start batching, after un-connect, indicator stop after finishing current batching.。

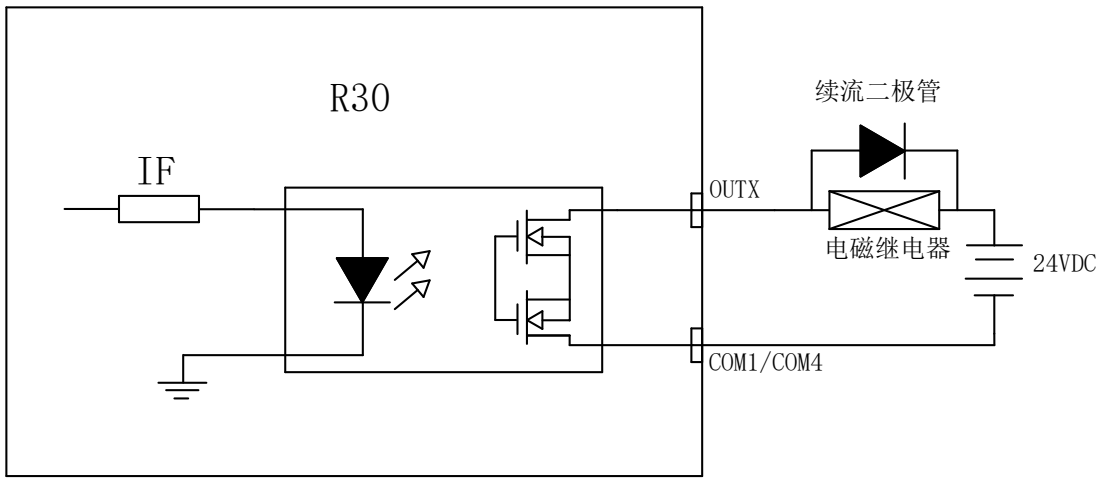
4.2.5 R30.20 output control pins

Output pin	Function instruction	Usage instruction
OUT1	Material 1 feed control（M1）	Isolation output, wire connecting as same source or same ground. Each output max load is 30VDC/200mA。
OUT2	Material 2 feed control（M2）	
OUT3	Material 3 feed control（M3）	
OUT4	Material 4 feed control（M4）	
OUT5	Fast add control(Coarse）	
OUT6	Slow add control（Fine）	
OUT7	Discharging control（Disch。）	
OUT8	Over-weighing alarm output	
OUT9	Scale zero output	
OUT10	Can definite from OUT1 to OUT9	
OUT11		
OUT12		

4.2.6 R30.00 output control pins

Output pin	Function instruction	Usage instruction
COARSE	Fast add control（increase: fast feeding）	Isolation output, wire connecting as same source or same ground. Each output max load is 30VDC/200mA。
FINE	Slow add control(slow feeding)	
DISCH	Discharging control （reduction: ending signal）	
ZTOL	Zero tolerance output	

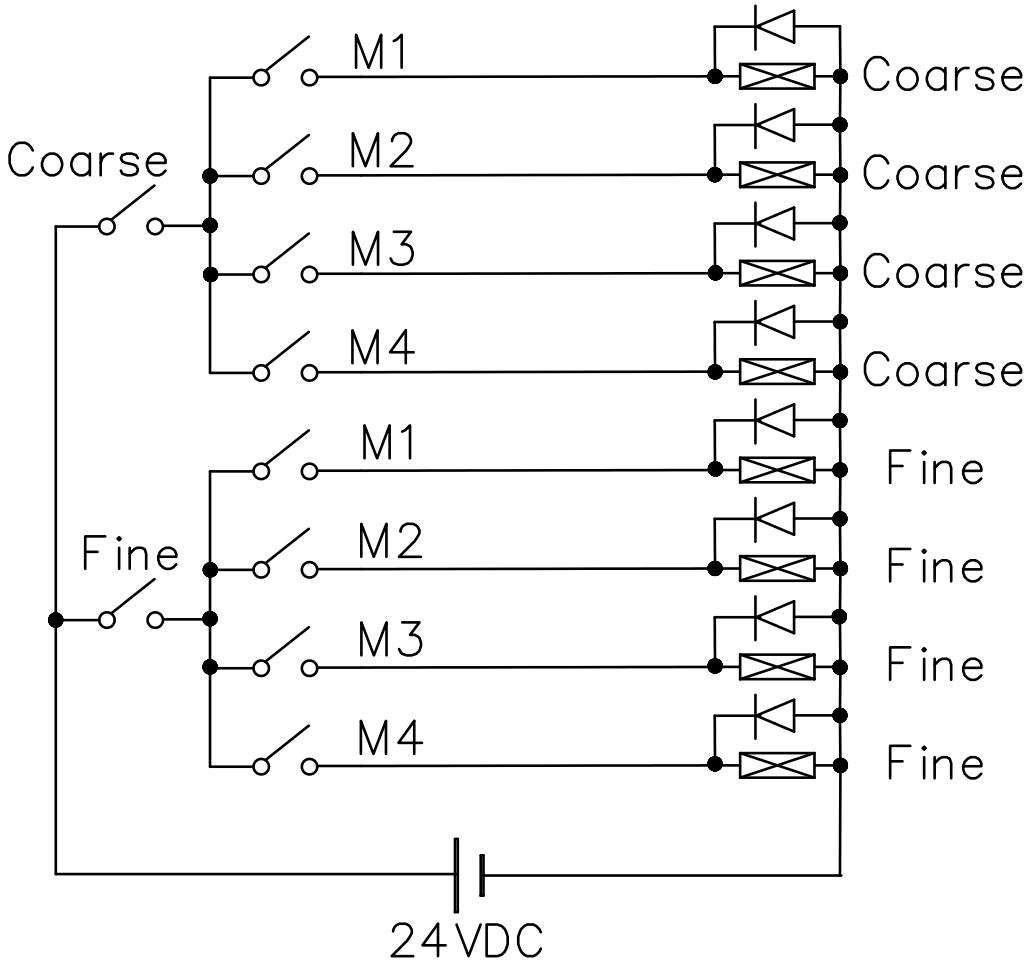
Output wire diagram：



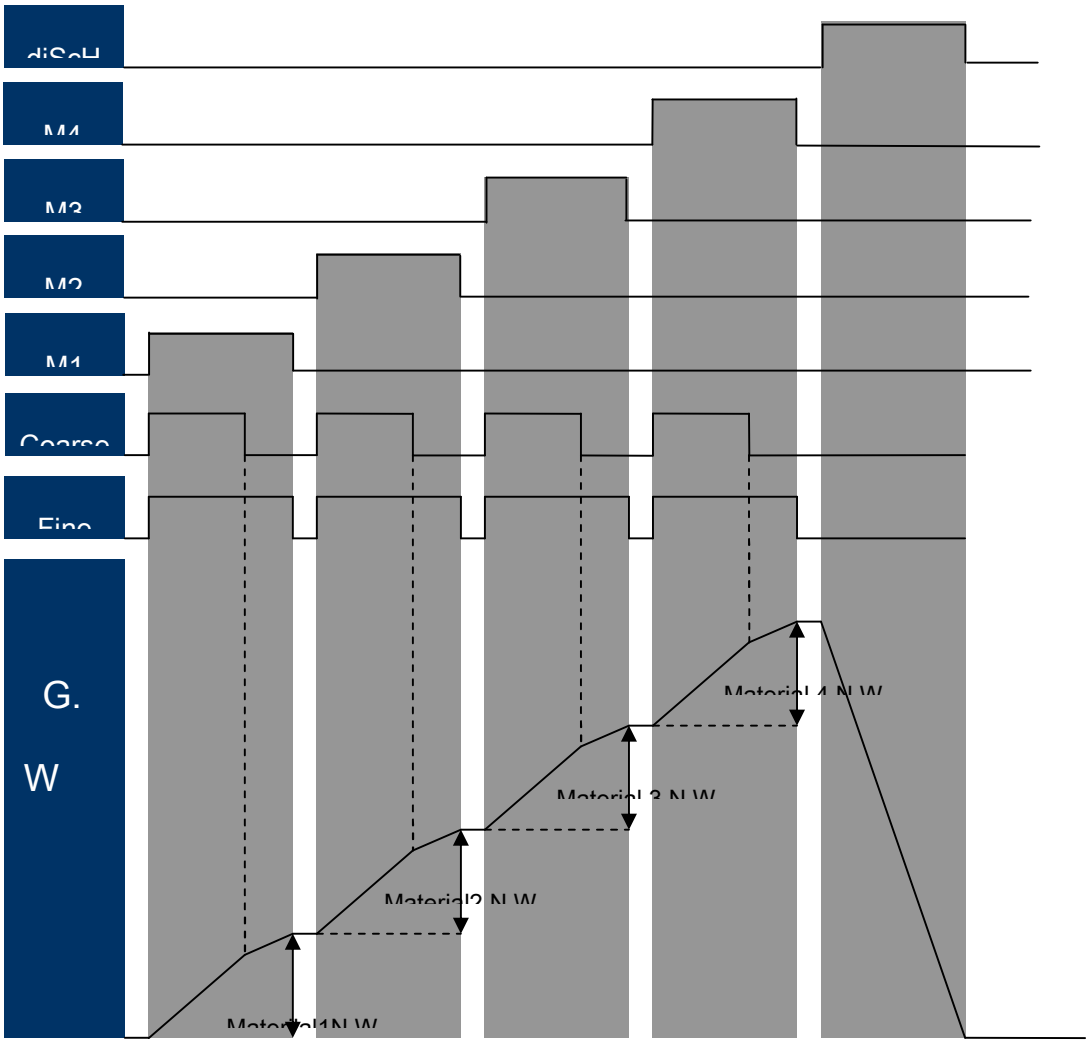
Note:

Output use optical coupling relay(MOSFET）, each output can pass max 200mA, out power supply not exceed 30V. When load is perceptual, pls add freewheeling diode, to avoid high voltage damaging relay when turning off.

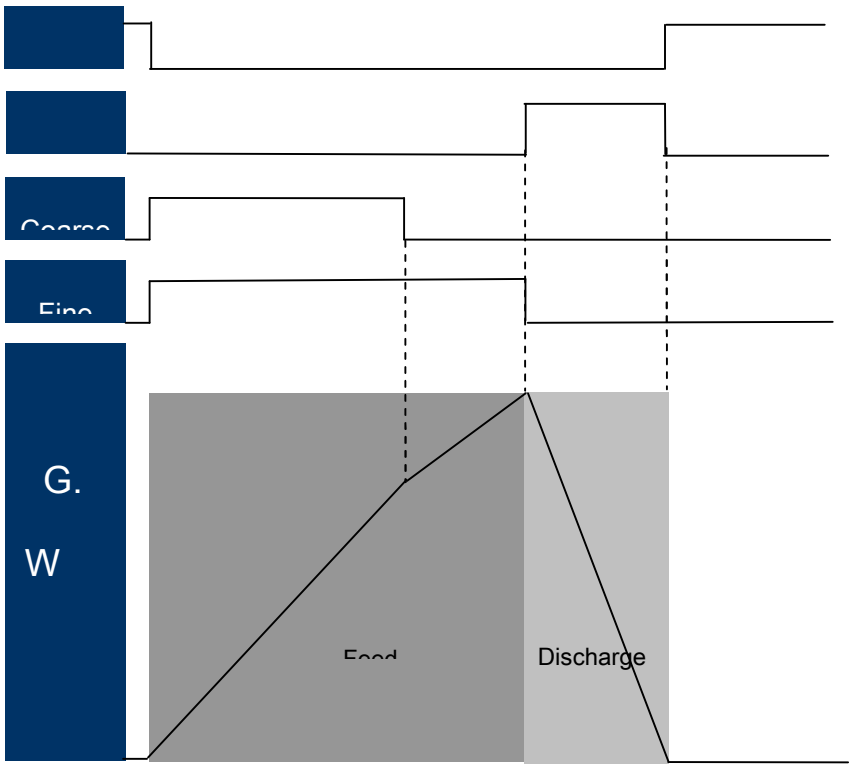
People can use following relay logic circuit under fast and slow batching control



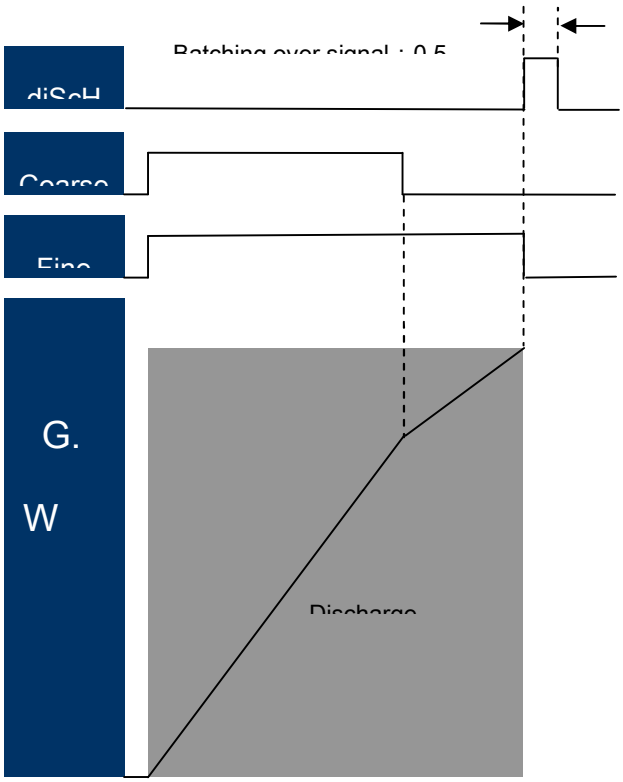
R30.20output pin logic connections



R30.00 output pin logic connections1---single material fixed data control



R30.00 output connection logic connections 2—fixed discharging material control



4.2.7 Switch and jumper

Main board mounts a switch SW1, connection chose JP1 & JP2, RS485 terminal use SW2.:

	SW1-1	SW1-2
Normal operation	OFF	OFF
Measurement of protection	ON	---
Internal testing	---	ON
Default	OFF	OFF

Adjust short-cut position at JP1 and JP2., can using 232 or 485, definition as below:

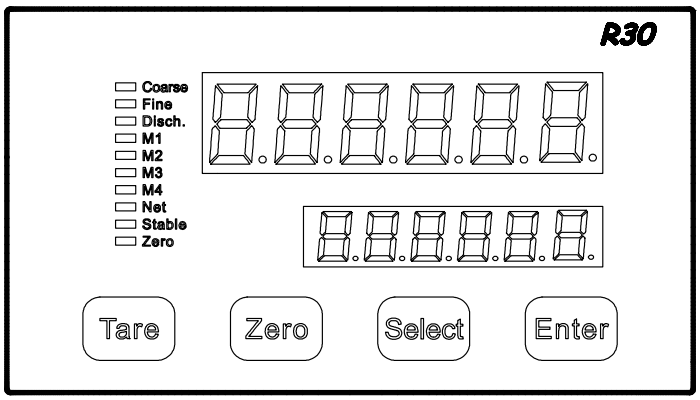
	232	485
JP1		
JP2		

Adjust short-cut position at SW2, choosing RS485as terminal resistance, SW2 fault is under OFF, stop using.

	SW2
ON	
OFF	

4 Operation

4.1 Display



connecting to power：

1、up/down display, all lights on need 2 seconds.

2、up display software No, down display software edit No. for example, up display [*460075*], down display [r 100]。

3、indicator display communication address, up display [Add]，down display address No, from 00-99；

4、indicator up display [bAud]，down display baud rate；

5、enter into weighing display, if current load is under boot zero range, weighing terminal start boot zero function automatically.

Note: boot zero

1、if F2.7 is set to 0, not boot zero, indicator display current weight based on last working zero, if there is tare during last turn off, tare can be reserved and displayed in next turning on.

2、if F2.7 parameter is not set to 0, and weight is within setting range,, boot zero, weight is calculated based on standard zero, if there is tare during last turning off, tare will be deducted, if weighing is out of setting range, up display [E0]；if weighing is unstable, up & down display [- - - - - -].

3、boot zero function concerns about F6.10 parameters, if F6.10=1, it start memory function, boot zero function can not work,, and it display current weight based on last working zero during turning off..

Display instruction

Display	Normal condition	Menu	Feeding	After feeding(discharging)	Setting
Up display	G.W./ N.W.	Menu name	Current feeding N.W.	N.W.	Item #
Down display	0 / tare	Empty	current material fixed data	Total N.W.	Setting data

Status indication cursor

Cursor	Meaning of lighting	Meanings of twinkling
Coarse	Fast-adding	--
Fine	Slow-adding	--
Disch.	discharging	--
M1	Material 1 finished	Material 1 finished

M2	Material 2 finished	Material 2 finished
M3	Material 3 finished	Material 3 finished
M4	Material 4 finished	Material 4 finished
Net	N.W. display	--
Stable	Sable condition	--
Zero	G.W. Zero condition	--

4.2 Switch

Switch position	ON	OFF
SW1-1	Calculation protection	Calculation protection not work
SW1-2	Checking model	Standard model

Compare between checking model & standard model.

Item	SW1-2 ON	SW1-2 OFF
Tare display range	-20d~MAX+9d	-MAX~MAX+9d
Automatic zero tracking range	0.0d(ban)、0.5d	0.0d(ban)、0.5d、1d、2d、3d、5d
Manual zero range	0.0、0.1、0.2、0.5、0.8、1、2、4	0.0、0.1、0.2、0.5、0.8、1、2、4、8、10、20

Note; of standard model parameter is bigger than checking models', when changing to checking model, parameter automatically be regarded as the max parameter,. For example, if automatically zero range is 5d, it will be 0.5d when changing to checking model.

4.3 Alarm

Parameter	F2.1=0	F2.1=1
Alarm	Off	On

4.4 Keypad

■ Keypad operation when showing tare.

Up display tare, down display "0", Net light off.

Keypad	Function	Operation instruction	Note
Tare	Tare	When weight terminal is under weighing display(not batching), and keypad is set as tare function,(parameter F2.2=1), and current display is stable(Stable light on), press that keypad for tare function.	
		When weight terminal is under weighing display(not batching),and keypad is set as pre-setting tare function(parameter F2.2=2), press that keypad, down display shows current tare(if operator not pre-setting,, down display's tare is same as current weight.), then operator press [Enter] to accept current tare, and start tare function., operator also can re-input new tare, and press [Enter] to accept tare, the	

		start tare function., if inputting tare is 0, and press [Enter], up display's tare is current tare, and start tare function., operator can press [Tare] to quite tare operation anytime,, if not meet tare requirement, indicator shows [no] 。	
Zero	zero	When weight terminal is under weighing display(not batching), and current tare is required within zero range, and current weight is stable (Stable light one）。If not meet boot zero requirements, indicator shows[no]。	
Select	Select	Press "select" to change to every menu, it does not influence batching process when changing menu.	
Enter	enter	Print,(parameterF3.1=1 or 2),when weight terminal display weight(G.W. or N.W)，and keep stable(stable light on), press that keypad, indicator print out current weight, if not stable, it shows [no]。	

■ Keypad operation when displaying N.W.

Up display N.W., down display N.W. Net light on.

Keypad	Function	Operation instruction	Note
Tare	tare	When weight terminal is under weighing display(not batching),press that keypad to start tare function, weight terminal up display current G.W., down display Tare.	
Select	select	Press "select" to change to every menu, it does not influence batching process when changing menu.	
Enter	enter	Print,(parameterF3.1=1 or 2),when weight terminal display weight(G.W. or N.W)，and keep stable(stable light on), press that keypad, indicator print out current weight, if not stable, it shows [no]。	

■ Keypad operation when menu display

Up display shows menu

Keypad	Function	Operation instruction	Note
Select	select	press "select" to change to every menu	
Enter	enter	Press that keypad to start current menu, or enter into other submenu	

■ Data input operation

Operator input data for pre-setting G.W. parameters, or formula, then down display shows all data, .Press [Enter], down display's first light twinkling.

Keypad	Function	Operation instruction	Note
Tare	Return	Give up all data, and return	
Zero	Change	Change display's twinkling number from 0 to 9.	
Select	replacement	Replace the number	
Enter	Enter	Accept the data, and return	

■ Keypad operation when setting submenu

Operating as following steps, and up display shows menu name, down display shows parameters.

Keypad	Function	Operation instruction	Note
Tare	return	When show submenu, press that keypad returning to last menu, if show first menu, press it to return to normal weighing condition.	
Select	select	Press that keypad showing each menu (same class), up display shows menu name, if have parameters, down display will show it, if blank, it means there still has submenu.	
Enter	enter	Press to enter current submenu, or start current menu order, or make menu enter into revise condition. (Parameter twinkles).	

■ Setting new parameter operation

Operator input data of formula and parameters, the down display shows parameter data, presses enter, and down display shows parameter, operating as below instruction.

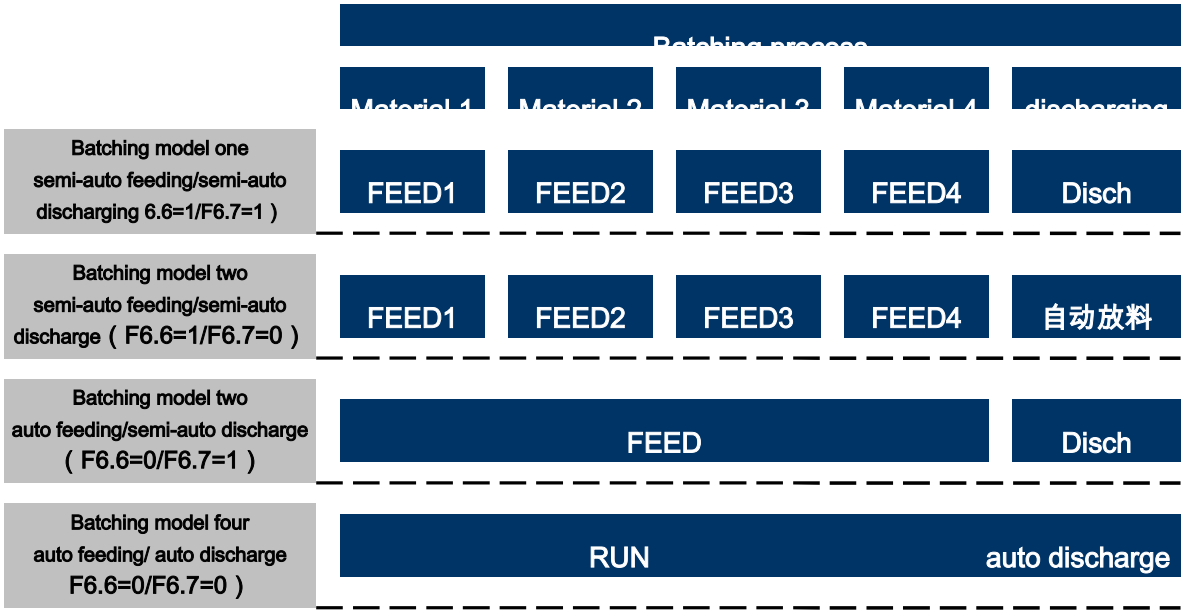
Keypad	Function	Operation instruction	Note
Tare	Return	Give up current parameter settings, return to last one.	
Zero	change	Press ZERO to adjust new parameter from displayed parameters. Parameter item displayed up, data displayed down.	
Select	replacement	If parameters have different numbers, can change the number by that keypad..	
Enter	enter	Accept new parameter from down display, and return.	

4.5 Batching operation

R30 has two batching models: mixed model（F6.11=0）and recycle model（F6.11=1）。

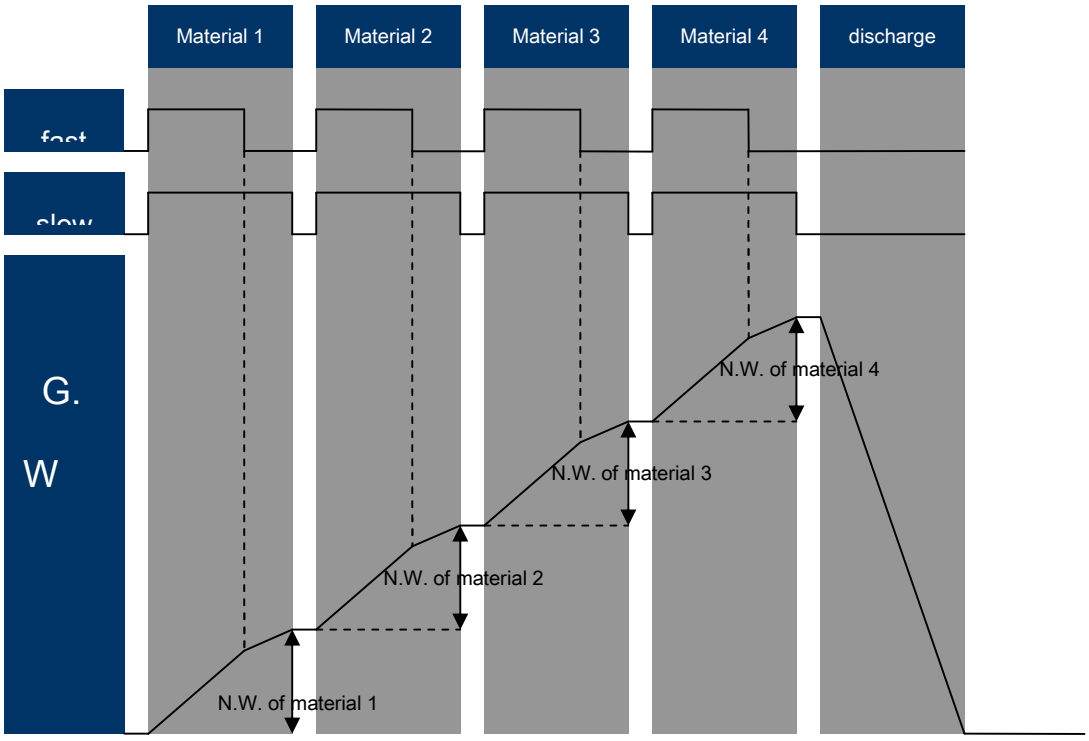
■ Mixed model batching process.

Normally batching start by feeding each material one by one, then discharging. There are mix five steps. T o assist those steps, R30 support 4 batching models, which can feed 4 materials automatically during semi-auto feeding.



Mixed model batching process

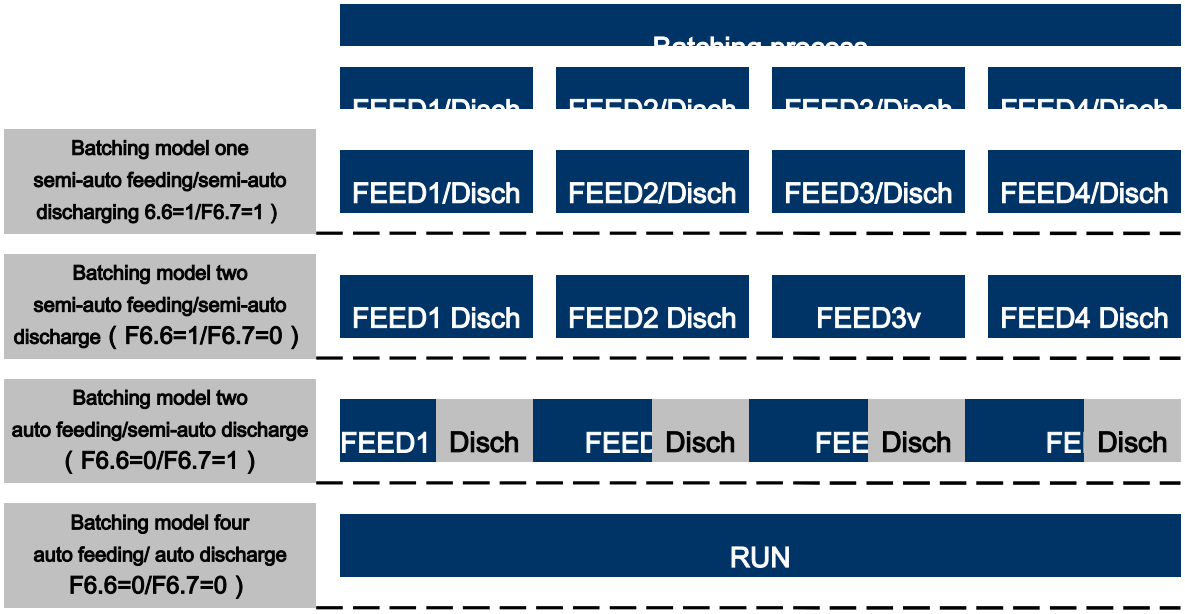
By using keypad, input control data and communication order to control those batching processes. Weight data change as below (indicator display N.W. when batching.)



■ Recycle model batching process

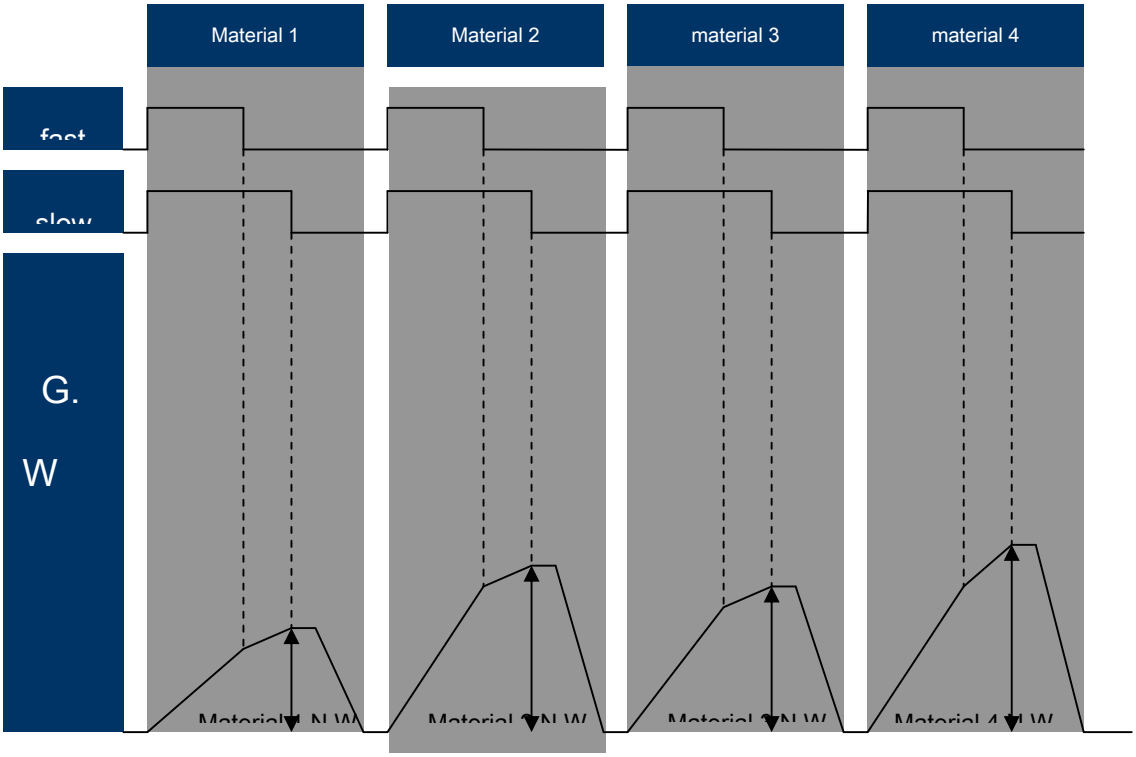
Feeding or discharging each material one by one, batching process includes 4 steps, to assist those steps, R30 support 4 batching models, which can feed 4 materials automatically during semi-auto feeding.

Disch



Recycle model batching process

Weight data change as below (indicator display N.W. when batching.)



■ Batching model（semi-auto feeding / semi-auto discharging）

Display menu list

Press [Select] to enter into following menu, and pay attention to instruction light during batching.

Menu list	Instruction	Required parameters
FEED	**Enter into batching menu**	F6.6=1，F6.7=1
rEPort	Print last batching report	parameterF3.1=1or 2，and finish one batching process.
AccPrt	Print consumption list of output material (when printing finished, it reminds AccClr, asking if deduct adding data, and deducing by press press key, not deduct by pressing zero.	Parameter F3.1=1or 2

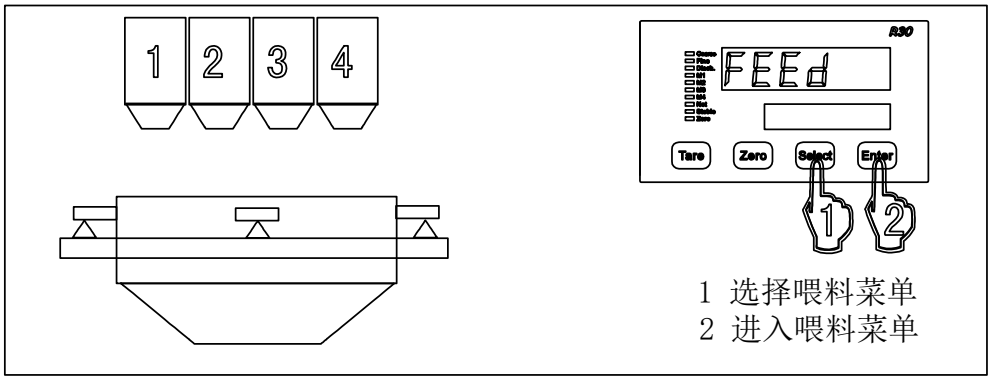
Display list under batching process.

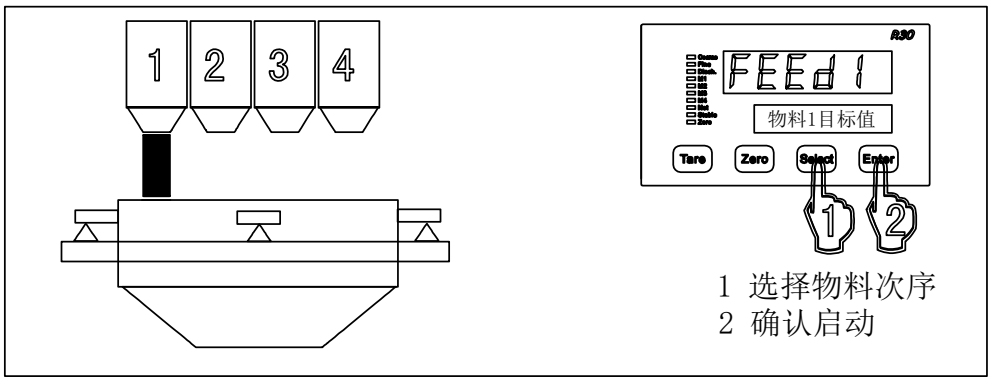
Display list	Instruction	Required parameters
FEED1	Start auto-feeding of material 1	Set allowed parameter(see F6.8）, and formula material should not be empty, before feeding, no material feeding.
FEED2	Start auto-feeding of material 2	
FEED3	Start auto-feeding of material 3	
FEED4	Start auto-feeding of material 4	
dISCH	discharge	all required materials feed as formula
HoLd	[press Enter] batching suspended	One material is feeding or discharging

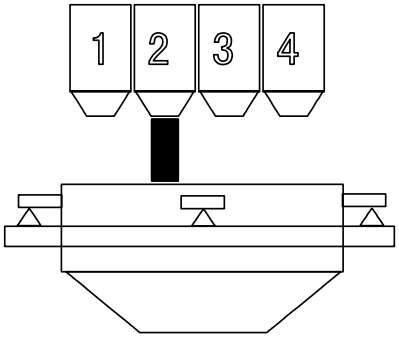
Display list under batching suspended condition

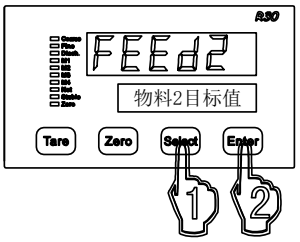
Display list	Instruction	Required parameters
run	Continue un-finished work	
Stop	Stop un-finished batching work	

Operation for semi-auto feeding / semi-auto discharging

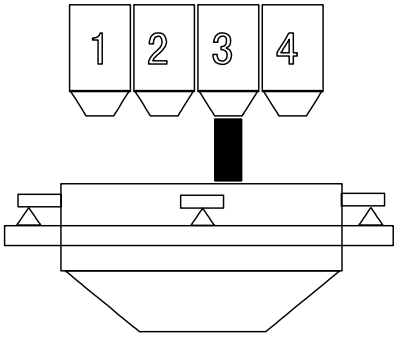


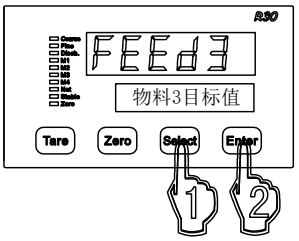




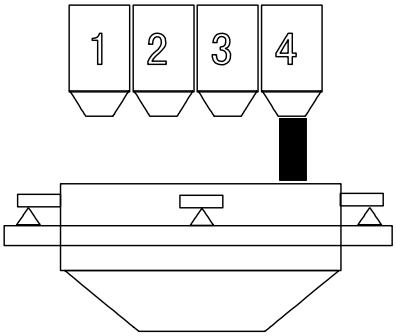


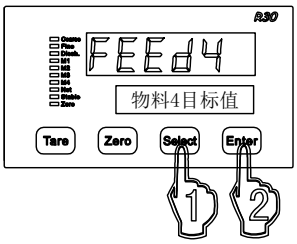
1 选择物料次序
2 确认启动



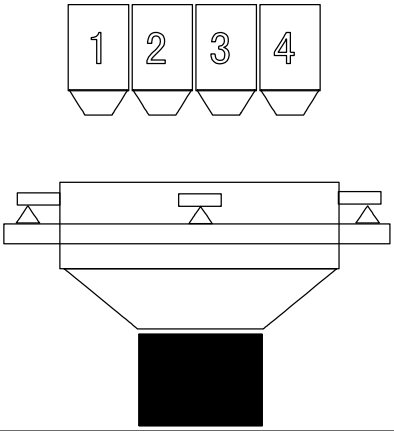


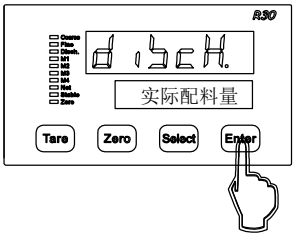
1 选择物料次序
2 确认启动



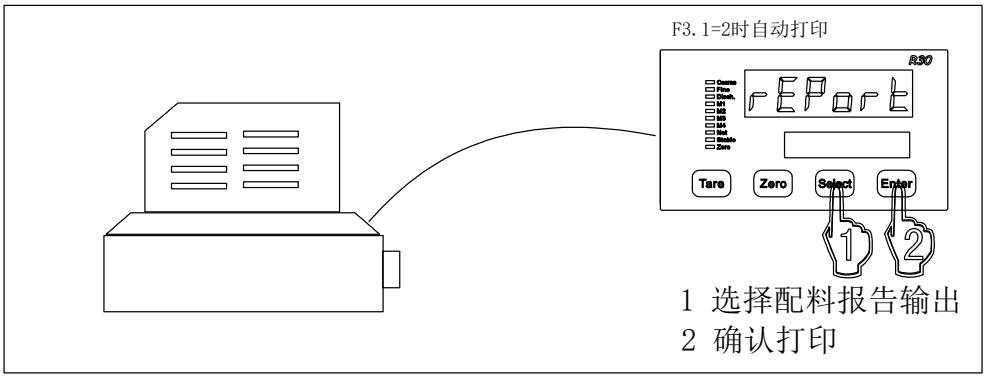


1 选择物料4
2 确认启动





确认启动卸料



■ Batching model two（semi-auto feeding / auto discharging）

Display menu list

Select each menu as following instruction; menu display is up, starting current menu by pressing press, and pay attention to instruction light during batching.

Display list	Instruction	Required parameters
FEED	**Enter into batching menu**	F6.6=1，F6.7= 0
rEPort	Print last batching report	Parameter F3.1=1or 2，and finish one batching process.
AccPrt	Print consumption list of output material (when printing finished, it reminds AccClr, asking if deduct adding data, and deducing by press press key, not deduct by pressing zero.	Parameter F3.1=1or 2

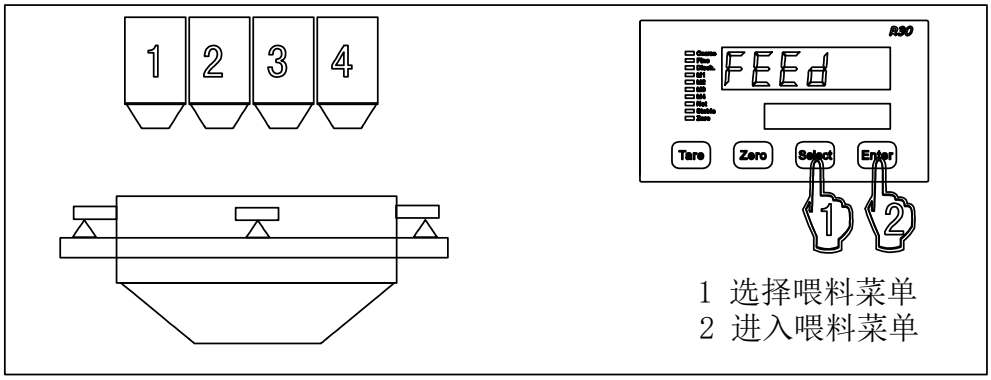
Display menu under batching condition

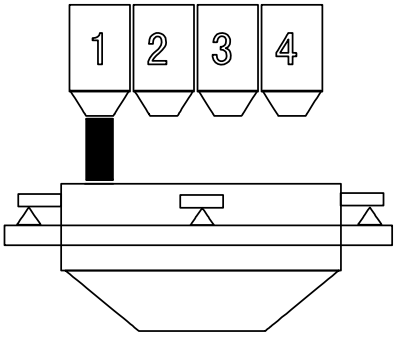
Display list	Instruction	Required parameters
FEED1	Start auto-feeding of material 1	Set allowed parameter(see F6.8）, and formula material should not be empty, before feeding, no material feeding.
FEED2	Start auto-feeding of material 2	
FEED3	Start auto-feeding of material 3	
FEED4	Start auto-feeding of material 4	
HoLd	[press Enter] batching suspended	all required materials feed as formula

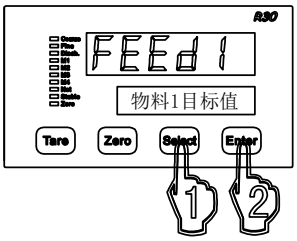
Display list under batching suspended condition

Display list	Instruction	Required parameters
run	Continue un-finished work	
StoP	Stop un-finished batching work	

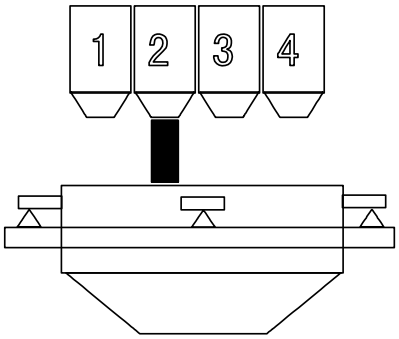
Semi-auto feeding / auto discharging operation:

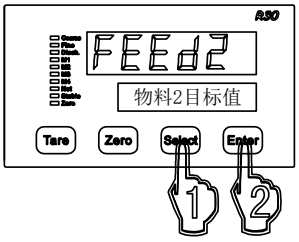




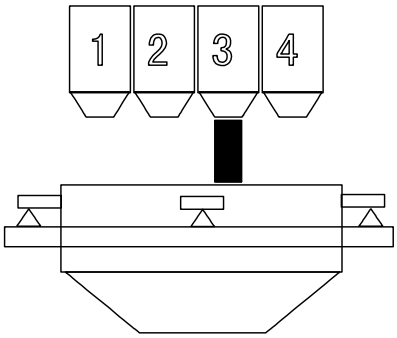


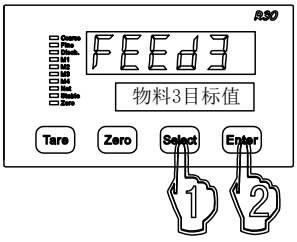
1 选择物料次序
2 确认启动



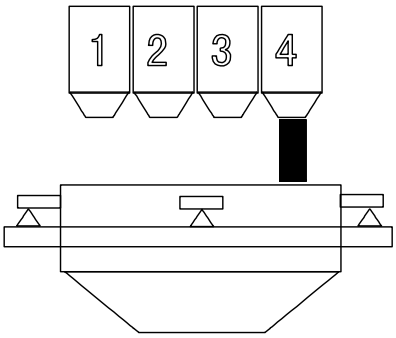


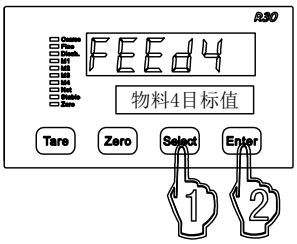
1 选择物料次序
2 确认启动



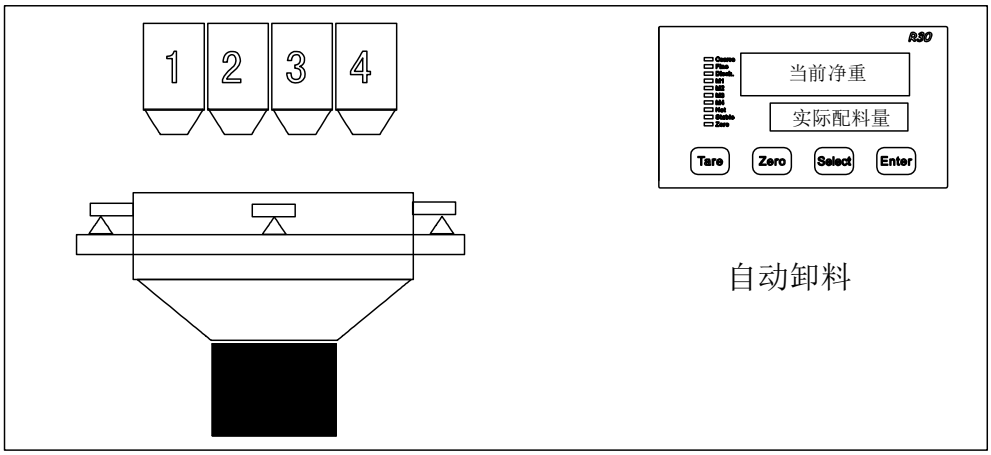


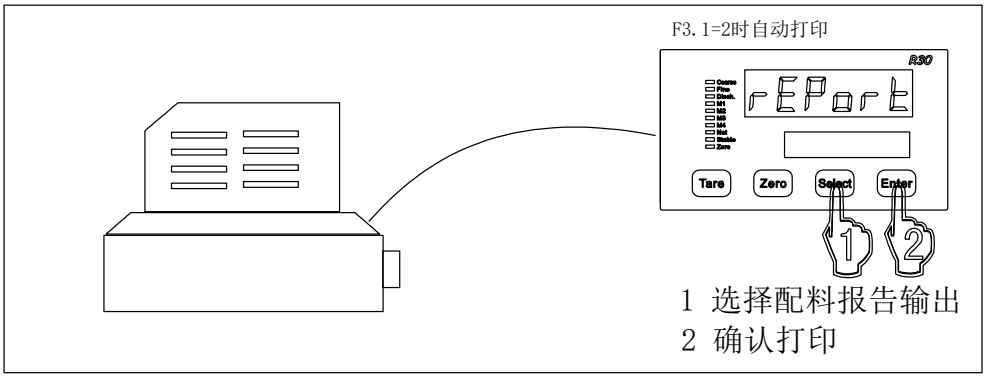
1 选择物料次序
2 确认启动





1 选择物料4
2 确认启动





■ Batching model three（auto feeding / semi-auto discharging）

Select each menu as following instruction; menu display is up, starting current menu by pressing press, and pay attention to instruction light during batching.

■

Display list	Instruction	Required parameters
FEED	**Enter into batching menu**	F6.6=1，F6.7= 0
rEPort	Print last batching report	Parameter F3.1=1or 2，and finish one batching process.
AccPrt	Print consumption list of output material (when printing finished, it reminds AccClr, asking if deduct adding data, and deducing by press press key, not deduct by pressing zero.	Parameter F3.1=1or 2

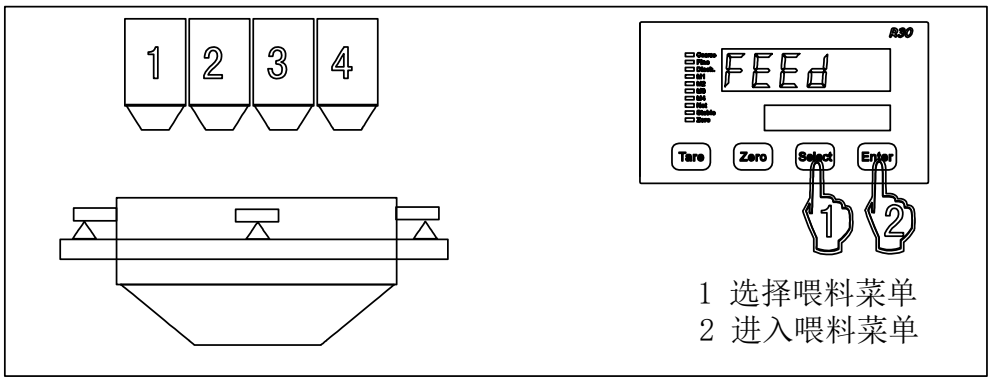
Display list under batching

Display list	Instruction	Required parameters
dISCH	discharge	Formula material feed is finished.
HoLd	[press Enter] batching suspended	

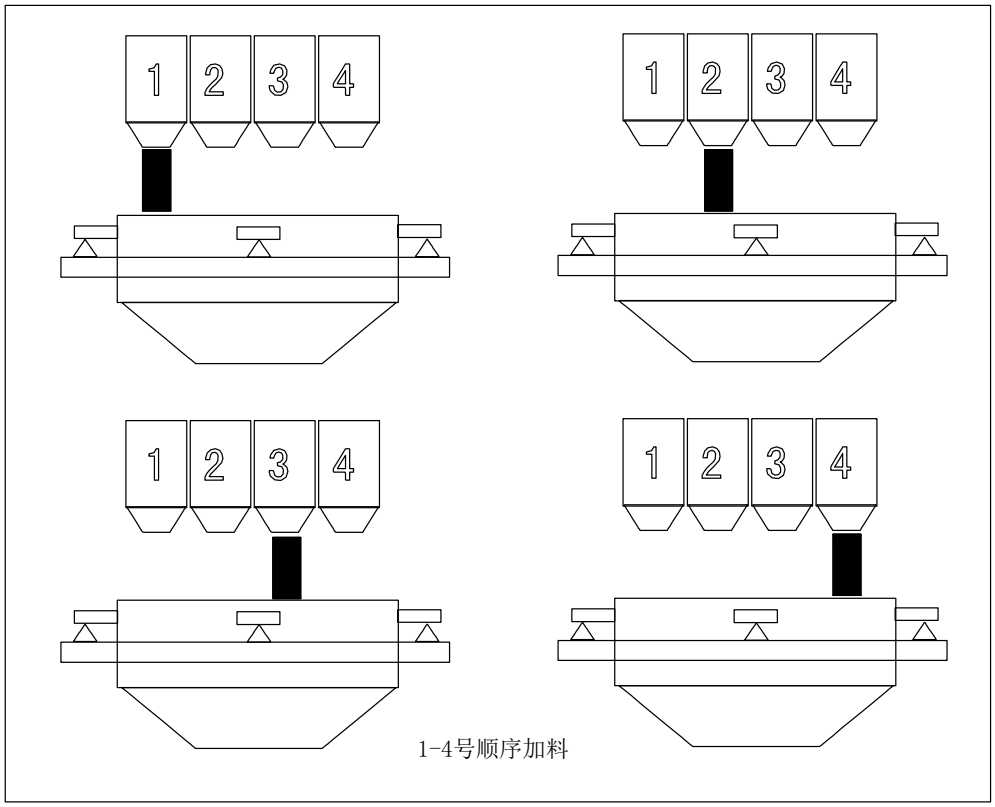
Display list under batching suspended

Display list	Instruction	Required parameters
run	Continue un-finished work	
StoP	Stop un-finished batching work	

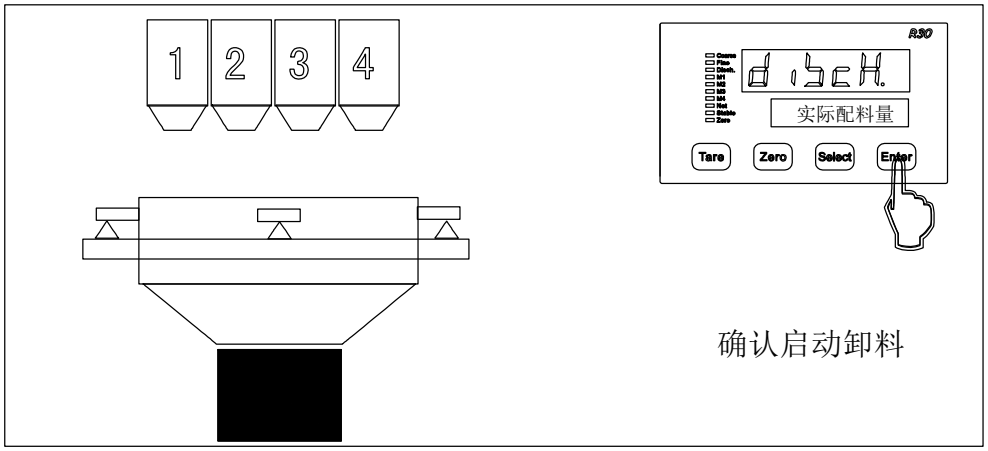
Auto feeding / semi-auto discharging operation:



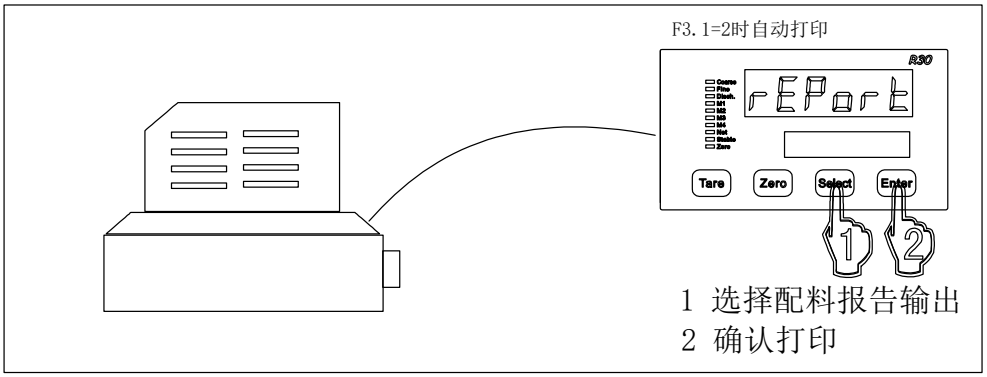
1 选择喂料菜单
2 进入喂料菜单



1-4号顺序加料



确认启动卸料



■ Batching model four（auto feeding / auto discharging）

Select each menu as following instruction; menu display is up, starting current menu by pressing press, and pay attention to instruction light during batching.

Display list	Instruction	Required parameters
run	**Enter into batching menu**	F6.6=1，F6.7= 0
rEPort	Print last batching report	Parameter F3.1=1or 2，and finish one batching process.
AccPrt	Print consumption list of output material (when printing finished, it reminds AccClr, asking if deduct adding data, and deducing by press press key, not deduct by pressing zero.	Parameter F3.1=1or 2

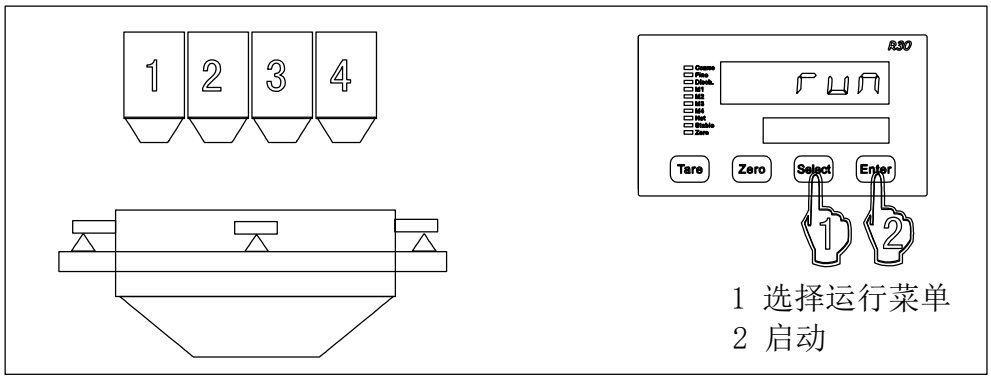
Display menu under batching condition

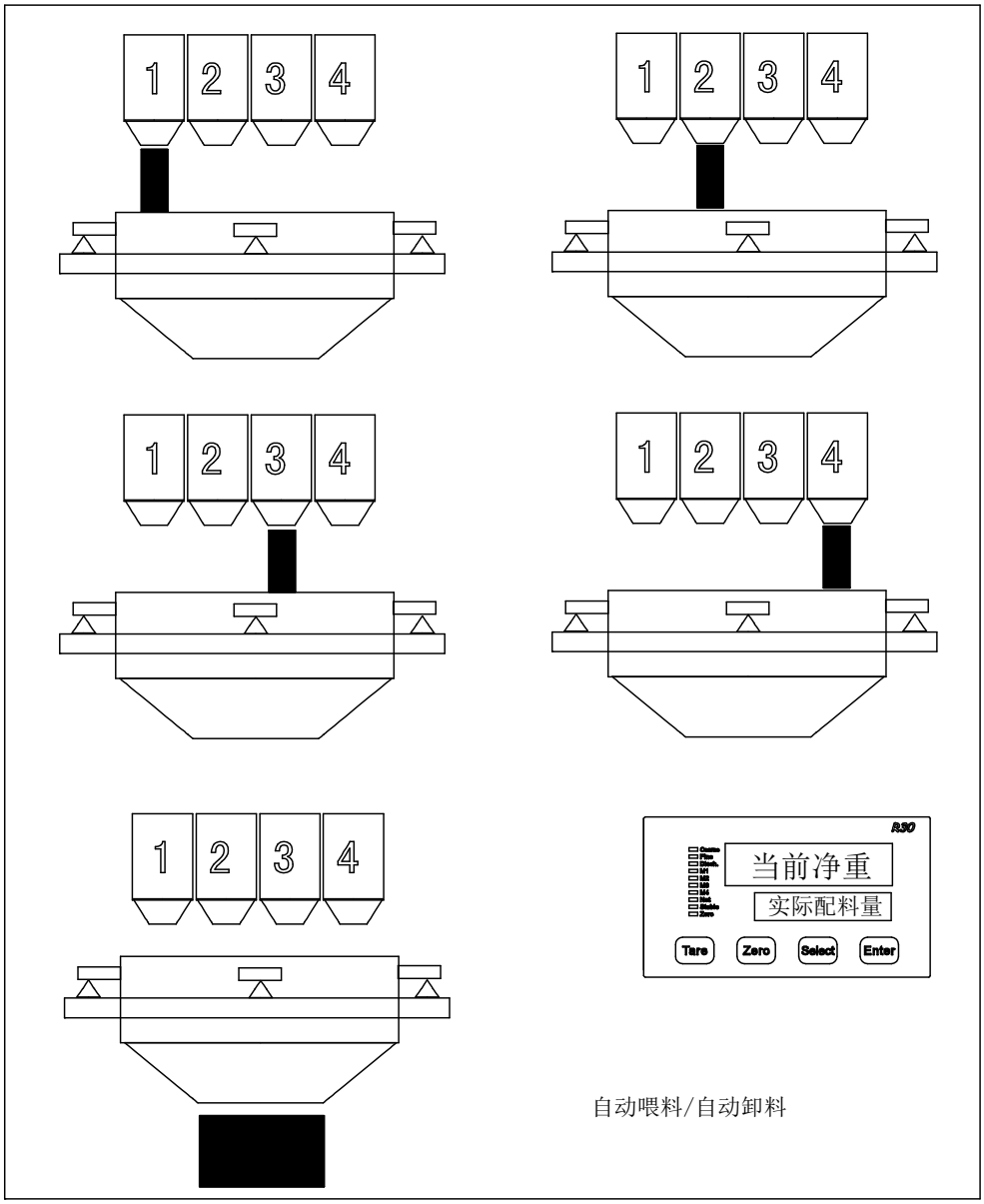
Display list	Instruction	Required parameters
HoLd	[press Enter] batching suspended	

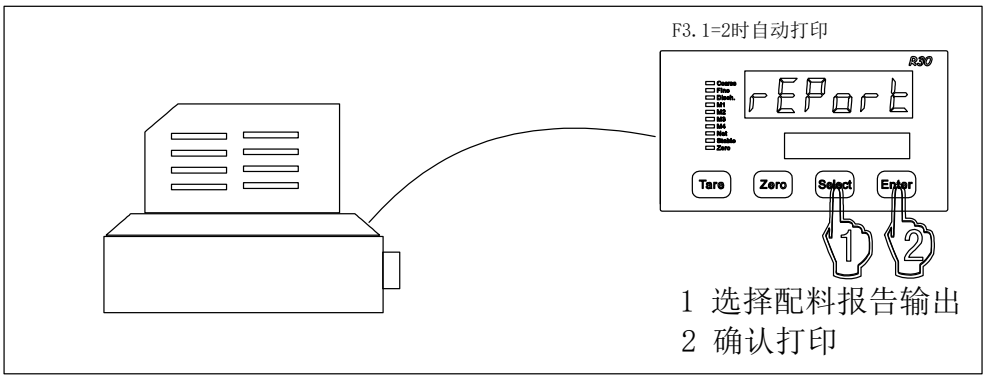
Display menu under batching suspended condition

Display list	Instruction	Required parameters
run	Continue un-finished work	
StoP	Stop un-finished batching work	

Auto feeding / auto discharging operation:







- Other instruction during batching process.
  1、 if formula data(all data is zero), indicator shows “noSHEt” when start.
  2、 If formula data is wrong, indicator shows “SHt.Err” when start; for example: one material data is bigger than“0”，and not meet (Target)≥(Fine) ≥ (Preact) rules, then it display wrong. If target is “0”，it skip rules to test.
  3、 parameter6.10=1, if there is unfinished batching process, up display will show “Go on”，press [Select] for “Yes” or “No”， “Yes” to continue last unfinished process, “No” means restart。

4、 if pre-setting data [bAtcH] ＞0, and finish the data, starting material show “End”。

5、 under mixed batching model, if added material is bigger than rated capacity, starting material shows“bAtcOUr”。

5 Formula and parameter settings

5.1 Keypad setting operation

Keypad	Function	Operation instruction	note
Tare	return	1）return to last menu. When setting a fixed data, press that key to return to last menu. For example, if display F1.1, press TARE to return to F1. 2）when up display show the top menu, press it to return to normal weighing condition. 3）when revising parameters, press TARE to give up, and return.	
Zero	change	When down display twinkling, press ZERO to change the data.	
Select	select	Press SELECT to each operation menu, and up display shows menu name.	
Enter	enter	Press ENTER to submenu, if at the bottom menu, the parameter data twinkle if press ENTER..	

5.2 Formula parameter setting

Batching stop, press [Select] and [Enter], and select [rECI PE]， enter into menu.

Menu	Instruction	Operation instruction
rECI PE	Select 1-10 folula	Checking and revising any formula by [SEt]
SET	Input formula data	Select formula by pressing [rECI PE]
bAtcH	Pre-setting data	0~9999， 0 means infinite times; when batching reaches pre-setting data, starting batching shows“End”
bAtcLr	Finished data deduction	Displayed data is finished one, press[Enter] to deduct, and added data is deducted, press [Tare] to return without deduction。

5.3 Formula parameter setting [SEt]

Menu	Instruction	Operation instruction
[M1] twinkle	Material 1 formula setting	Down display shows material 1's target data, press [ENTER] to enter material one's submenu.
tArGEt (Target)	Material 1 target weight	At the beginning of material 1 feeding, it fast reaches a fixed target（ Target - Fine），then slowly feeds to another fixed data （closing feeding signal come out, and open slow feeding signal）(Target - Preact)，then weight terminal send a signal of closing slow feeding. There is a over-feed material during closing feeding to a stable condition, and weight terminal will pre-compensate the tolerance. For example: target is 100kg, over-feed tolerance is 1.5kg, so weight terminal will send a signal of closing feeding when it reached 98.5kg. Tolerance can be pre-set manually, or automatically fixed by weight terminal during batching. Formula data: (Target)≥(Fine) ≥ (Preact)，or indicator will show"Err"。 Normally, tolerance ≥0, to guarantee + tolerance, operator can set it as 0.
FinE （Fine）	Material 1slowly adding weight	
PrEACt （Preact）	Material 1 charging lead	
[M2]twinkle	Material 2 formula setting	！when setting parameter F6.8>1，this menu appears.
tArGEt	Material 2 target weight	
FinE	Material 2 slowly adding weight	
PrEACt	Material 2 charging lead	
[M3]twinkle	Material 3 charging lead	！when setting parameter F6.8>2, this menu appears.
tArGEt	Material 3 target weight	
FinE	Material 3 slowly adding weight	
PrEACt	Material 3 charging lead	
[M4]twinkle	Material 4 charging lead	！when setting parameter F6.8=4 时，this menu appears.
tArGEt	Material 4 target	

	weight	
F inE	Material 4 slowly adding weight	
PrEACt	Material 4 charging lead	

6 Weight calibration menu

6.1 Enter weight calibration menu

Under normal weight display condition(not batching), press[Enter] & [Tare] together, indicator up display shows[F1]，then press [Enter] to enter into submenu, press [Select] for other parameter group.

Note: indicator main board SW1-1 switched to “OFF” to revise capacity, and F1.4 parameter is not limited by SW1-1.

Menu	Instruction	note
F1.1 d	division	Optional divisions：0.001、0.002、0.005、0.01、0.02、0.05、0.1、0.2、0.5、1、2、5、10、20、50
F1.2 C	Rated capacity	Rated capacity meet formula:500≤(rated capacity/division) ≤20000
CAL X	Calibration	0：skip(not calibrate)；1：weight calibration；2：input calibration parameter；3：input sensitivity. Normally use weight for calibration.
F1.3	unit	0： g 1：kg 2：t that parameter is useful when pressing [Enter] for printing.
F1.4	Extended display	0：displaying standard weight 1：displaying extended weight, operator can boot zero, can not tare, F3.1 is required to be 0（R30 successive output format）。When displaying extended weight, it is 0 for empty scale, and 20 times of divisions for full scale. It is used for high precision required data, normally it is 0。

6.2 Weight calibration

Menu	Instruction	Operation instruction
E SCAL	Zero calibration	Keep scale empty, [Enter] for zero calibration, down display counts 10 seconds during calibration, if any vibration, then it re-counts 10 seconds. **[Select] for skipping zero calibration, if under N.W. condition, indicator shows “No”。**
Add L d 1	First adding point calibration.	Adding weight on scale(normally 20%~100% of max weight), [ENTER] for calibration.。Down display counts 10 seconds during calibration, if any vibration, then it re-counts 10 seconds. [Select] for skipping first adding point calibration.
inP L d 1	First adding weight	Input first adding weight, P A S S means success.
Add L d 2	Second	If no second adding point calibration, press Tare] to return to last

	adding point calibration.	menu. Adding weight to scale, make sure it's near to max capacity.。[Enter] for calibration。Down display counts 10 seconds during calibration, if any vibration, then it re-counts 10 seconds.
inP L d 2	Second adding weight	Input second adding weight, P A S S means success.

Error reminding

Mark	Instruction	Subsequent rending	solution
E4	Each division sensitivity < 0.5uV	No	
E5	Sensitivity is too low, calibration fail	**A d d L d**	1、re-load 2、checking system
E6	Max division < 500 or > 20000	No	Re-input
E7	Input weight is wrong > rated capacity or ＝0	**I n P L d**	Re-input right weight
E8	Signal connection wrong, or without weight.	**A d d L d**	1、re-load 2checking system(signal wire);
E9	Compensation range exceed 20%，second calibration is invalid	**F1.3**	

6.3 Input calibration parameter

It is suitable for already-known calibration coefficient. For example if already record calibration parameter, when system is wrong or parameter is lost, operator can re-input calibration parameter to recover.

Menu	Instruction	note
L	1：first calibration；2：second calibration。	
C1	First calibration coefficient	
CF0	Calibration zero internal code	
CF1	First adding point internal code	
C2	Second calibration coefficient	Arise when L=2
CF2	Second adding point internal code	Arise when L=2

Note: above calibration parameter is calculated by weight, can achieve weight revise by adjusting C1 or C2

6.4 Input sensitivity

It is used for scale when it can not be loaded. To make sure scale structure & installation right, signal connection is right. That data is for reference only, not so precision..

Menu	Instruction	Note
LC_CAP	Load cell total capacity., like 4 pcs 1000kg，need to	

	input 4000	
LC_S e n	Load cell sensitivity, like 2mV/V, need to input 2.0000	

Note: input and confirm sensitivity, calibration parameter correlation change, but not influence the sensitivity, for example, sensitivity is 2.00000mV/V，parameter C1 is 0.02，that two data is correlation, if change C1 to 0.04，sensitivity is still 2.00000mV/V。

7 Scale application parameter F2

Menu	Instruction	Parameter
F2.1	boozer	0：boozer off 1：boozer on
F2.2	G.W. operation	0：G.W. operation is limited. 1：G.W. operation is allowed(for batching, pls choose that parameter) 2：pre-set G.W. is allowed
F2.3	Manual zero range	Percentage of the biggest weighing：0.0 0.1 0.2 0.5 0.8 1 2 4 8 10 20 0.0 Zero is limited.
F2.4	Zero tracking range	0.0d 0.5d 1d 2d 4d 5d 0.0d means zero tracking is limited, tracking speed is less than 0.5d/s。
F2.5	Dynamic detection range	Setting division from 0 to 10, dynamic detection is limited when setting 0.
F2.6	Filter coefficient	0-9，filter is bigger when number increase, operator should set data reasonably for batching,, if shake lightly, adjust coefficient lower, reacting speed faster, if shake strongly, adjust coefficient higher, and increase the tolerance data.
F2.7	Boot reset range	0-10，means percentage of the biggest weighing., 0 means not boot zero.

8 Serial communication parameter F3

Menu	Instruction	Parameter
F3.1	Communication protocol	0：R30 successive format 1：Manual report format 2：automatic report format 3：MODBUS RTU
F3.2	Check sum	F3.1 is not 0, that parameter is invisible. 0：no check sum under R30uccessive format 1：send check sun under R30uccessive format
F3.3	Baud rate	2400/4800/9600/19200
F3.4	Data bits	MODBUS RTU（parameterF3.1=3）, that parameter can only be 0、1、2。 0：8 data bits / no check bit

		1：8 data bits / odd check bit 2：8 data bits / even check bit 3：7 data bits / odd check bit 4：7 data bits / even check bit Select 8data bits, manual/automatic report format output Chinese, or it is English output.
F3.5	Unit output selection	0：F3.1=1or 2, press [Enter] to print weight without unit 1：F3.1=1or 2, press [Enter]to print weight with unit.
F3.6	Communication node address	0-99（Modbus communication node address should be over 0.

8.1 R30 successive output format

That communication protocol require F3.1=0。R30 send data string successively, it is composited with 17 or 18 bytes.。data string sending frequency: baud rate 9600/19200：20Hz；baud rate 2400/4800：10Hz

Byte order	instruction	
1	Initial character（=02H）	
2	Byte	Status word A
	.0	3 bits' group show weight data's point position
	.1	001 = xxxxx0 010 = xxxxxx 011 = xxxxx.x
	.2	100 = xxxx.xx 101 = xxx.xxx
	.3	Fast feeding output condition 0=off / 1=on
	.4	Slow feeding output condition 0=off / 1=on
	.5	Always 1
	.6	Always 0
3	Byte	Status word B
	.0	G.W. is 0, that bit is 0 / G.W. is not 0, that bit is 1.
	.1	Current weight is +, that bit is 0 / current weight is -, bit is 1.
	.2	Current weight is within range, bit is 0 / out of range, it is 1
	.3	Current weight is stable, bit is 0 / dynamic, it is 1.
	.4	Always 1
	.5	Always 1
	.6	Always 0
4	Byte	Status word C
	.0	3 bits group means current fixed data, or batching control.
	.1	000：stop condition 001: material 1 is feeding 010：material 2 is feeding
	.2	011： material 3 is feeding 100： material 4 is feeding 101： discharging 110： batching suspended.
	.3	Keypad or outer printing request 0= no print / 1= print request input.
	.4	Weight extended display 0=normal display / 1=extended display
	.5	Always 1
	.6	Always 0
5	Tare=0, output G.W., Tare ≠0, output N.W.	
6	When feeding, it is actual feeding data,, when discharging, it is actual left	

7	material's total weight. （ASCII code、without points）
8	
9	
10	
11	Tare under normal weighing condition When feeding, it is target feeding data When discharging, it is total weight of current material. When suspended, it is actual feeding data of current material. （ASCII code、without points）
12	
13	
14	
15	
16	
17	return character（=0DH）
18	Check sum, low bits of former 17 bits' sum.

8.2 MODBUS communication protocol

MODBUS as main forms of network communication protocols; indicator is used as slave forms of MODBUS network. Data format is RTU, support function of"03"and"06"。Using MODBUS require F3.1=3，8 data bits, check bit is set at F3.4, MODBUS address is set at F3.6. weight is displayed by 16 bits number, range -32768~+32767, if out of range, it will influence data. If have points, the data need conversion, for example, division is 0.02kg, current G.W. 24.56kg, by using MODBUS, weight is read as: 0998（Hexadecimal）,2456 (Decimal), actual weight is：2456×0.01=24.56 kg。 same for inputting, if material 1 target is 50.00kg, need to converse 5000（decimal）to 40010 register.

Register address	Bit	Following a read-only function code 03
40001		G.W.
40002		N.W.
40003	.0	Material 1 feed slowly
	.1	Material 1 feed fast
	.4	Material 2 feed slowly
	.5	Material 2 feed fast
	.8	Material 3 feed slowly
	.9	Material 3 feed fast
	.12	Material 4 feed slowly
	.13	Material 4 feed fast
40004	.0	Formula No. :0001~1010 =1~10;
	.1	
	.2	
	.3	
	.4	Batching run
	.5	Batching suspended
	.6	discharging
	.7	Waiting for discharging
	.8	Weight division: 0000=0.001 0001=0.002 0010=0.005 0011=0.01 0100=0.02 0101=0.05 0110=0.1 0111=0.2 1000=0.5 1001=1 1010=2 1011=5
	.9	
	.10	

	.11	1100=10 1101=20 1110=50 1111：no definition
	.12	Over load tolerance
	.13	Dynamic
	.14	Semi-auto feeding
	.15	Semi-auto discharging
40005		Actual batching data of current material 1(data is kept until next batching, and cleared when power off.
40006		Actual batching data of current material 2(data is kept until next batching, and cleared when power off.
40007		Actual batching data of current material 3(data is kept until next batching, and cleared when power off.
40008		Actual batching data of current material 4(data is kept until next batching, and cleared when power off.

Register address	Bit	Following a read-only function code 03
40009		Tare weight
40010		Target of material 1
40011		Target of material 2
40012		Target of material 3
40013		Target of material 4
40014		Material 1 difference data of fast adding point to target
40015		Material 2 difference data of fast adding point to target
40016		Material 3 difference data of fast adding point to target
40017		Material 4 difference data of fast adding point to target
40018		Over-load tolerance of material 1
40019		Over-load tolerance of material 2
40020		Over-load tolerance of material 3
40021		Over-load tolerance of material 4
40022		Zero range
40023		Correction frequency of over-load tolerance
40024		Delayed starting time
40025		Delayed discharging control time
40026		Comparing time limited
40027		Delayed checking time
40028		Reserved
40029		Reserved
40030		Reserved
40031		Reserved
40032		Reserved
40033		F6.4 feeding over-load checking frequency 0-99
40034		F6.4A adding ranging0-99
40035		F6.5 auto tare interval
40036		F6.6 feeding model

40037		F6.7discharging model
40038		F6.8 batching model
40039		F6.9.1 feeding speed setting of material 1
40040		F6.9.2 feeding speed setting of material 2
40041		F6.9.3 feeding speed setting of material 3
40042		F6.9.4 feeding speed setting of material 1
40043		F6.10 memory under power off
40044		F6.11 batching model
40045		Default of batching quantity 0-9999
40046		Finished batching, clear by inputting 0, and added data is cleared too.
40047		Material 1 high consumption (note 1) ready-only
40048		Material 1 low consumption (note 1) ready-only
40049		Material 2 high consumption (note 1) ready-only
40050		Material 2 low consumption (note 1) ready-only
40051		Material 3 high consumption (note 1) ready-only
40052		Material 3 low consumption (note 1) ready-only
40053		Material 4 high consumption (note 1) ready-only
40054		Material 4 low consumption (note 1) ready-only
40055		40055~40100 reserved。
40100		
40101	.0	No definition
	.1	
	.2	
	.3	
	.4	No definition
	.5	
	.6	
	.7	
	.8	Batching start（F6.6=0）
	.9	Batching suspended
	.10	Batching stop
	.11	discharging（F6.7=1, and feeding is finished）
	.12	tare（un-batching and stable weight， tare function F2.2=1）
	.13	Tare clearing
	.14	Boot zero（un-batching and stable weigh, and weight is within boot zero range）
40102	.0	0001~1010 =1~10：choosing batching No.（1~10）
	.1	
	.2	
	.3	
	.4	10：choosing semi-auto batching model（F6.6=1）
	.5	11：choosing auto batching model (F6.6=0）

	.6	10：choosing semi-auto discharging model（F6.7=1）
	.7	11：choosing auto discharging（F6.7=0）
40103		Scale calibration： 0：0 calibration xxxx：adding point calibration（xxxx scale's adding weight）

Note 1: two registers composite 32 bits data, for example, material 1's consumption is 1223768，Hexadecimal is 12AC58，40047 register' content is 0012（Hexadecimal），40048 register's content is AC58（Hexadecimal）

8.3 [Enter] printing format (F3.1=1 or F3.1=2)

Under that communication protocol, pressing [Enter], then output following data:：

F3.4=3 or 4： F3.4=0、1or 2（support Chinese） F3.5=1，print with units

```
GROSS:  1000.5
 TARE:     0.0
  NET:  1000.5
```

```
毛重:  1000.5
皮重:     0.0
净重:  1000.5
```

```
GROSS:  1000.5kg
TARE:     0.0kg
NET:  1000.5kg
```

8.4 Batching result printing format (F3.1=1or F3.1=2)

At [rEPort] menu，press [Enter] to print current batching data。

F3.4=3 or 4， print as below ： F3.4=0、1 or 2， print by Chinese as below：

BATCHING RESULT (No. 1)

MATERIAL	TARGET	RESULT	TOLERANCE
1	1001	1000	-1
2	1002	1000	-2
3	1003	1000	-3
4	1004	1000	-4
	4010	4000	-10

当前配料表 (No. 172)

物料	目标重量	实际重量	误差
1	100.0	99.5	-0.5
2	100.0	99.5	-0.5
3	100.0	100.5	0.5
4	100.0	100.5	0.5
	400.0	400.0	0.0

F3.1=2，each batching ends, serial connector will send batching list as above.

At [AccPrt]menu，print [Enter] to print material consumption list..

F3.4=3 or 4，print in English： 当 F3.4=0、1or 2，print in Chinese：

MATERIALS CONSUMPTION

MATERIAL	ACCUMLATION
1	1000
2	1000
3	1000
4	1000
TOTAL:	4000

物料 ［物料用量表］	重量
1	1000
2	1000
3	1000
4	1000
累计	4000

Connecting out printing equipments, like 40 bits serial connector micro printer..

9 Batching function parameter F6

Menu	Instruction	parameter
F6.1	Zero promised range	When discharging less than default data, indicator delay some times（F6.3.4 discharging delays），and close discharging valve.
F6.2	Setting of Continuous offset checking frequency during auto-correction of feeding over-load data. （0~9）	There is an over-load weighing during feeding closed to scale stable, indicator will compensate based on that data.. for example: target is 100kg, over-load tolerance is 1.5kg，weighing terminal will close feeding valve when feeding to 98.5kg。
F6.3	Work time parameter	
	F6.3.1	Delayed starting time sdt =（0.0~9.9 s
	F6.3.2	Comparing time limited cit =（0.0~9.9s）
	F6.3.3	Delay checking time ttc =（0.0~9.9s）
	F6.3.4	Delayed discharging control time tdc =（0.0~9.9s）
F6.4	Frequency of feeding over-load tolerance testing	When etc =（0~99） etc=0，testing is limited ，etc=1～99，each batching from1 to 99，need a test for each material after feeding., if tolerance is out of promised range, then indicator “TOL” output terminal send alarm signal about 0.5 s. during batching application, it is set as 1 normally.
F6.4A	Error bounds	Percentage of each material’s target range（0.0~9.9%）。 For example: F6.4A setting range is 1.0%, one material target is 100KG, if actual feeding data is not within 99~101kg, indicator ‘TOL’send alarm signal, meanwhile batching suspended.
F6.5	Auto tare times	ate =（0~99）， 0 = auto tare limited 1 ~99 = auto tare after 1~99 finished.
F6.6	Feeding selection	0：automatic 1：semi-automatic （R30.00 only have 0）
F6.7	Discharging selection	0：automatic 1：semi-automatic
F6.8	material	1/2/3/4 1~4 material optional （R30.00 only have 1）
F6.9	Feeding model	1：single speed feeding 2：dual speeds feeding
	F6.9.1	1or 2
	F6.9.2	1or 2

	F6.9.3	1or 2
	F6.9.4	1or 2
F6.10	Power off during batching/ memory stop	0：limit 1：promise
F6.11	Batching process	R30.20---0：mixed batching 1：recycle batching R30.00---0：single material fixed control 1：fixed data discharging control

Notes: time parameter diagram during batching.

- Start delayed time（SDT）

SDT for each batching process。When closing discharge door, due to mechanical action, weight hopper vibrate, make weight data changing, so it need SDT. Indicator receive start signal, delay（0～9.9）s, then start batching, that time can be set at F6.3.1。

- Comparing limit time（CIT）

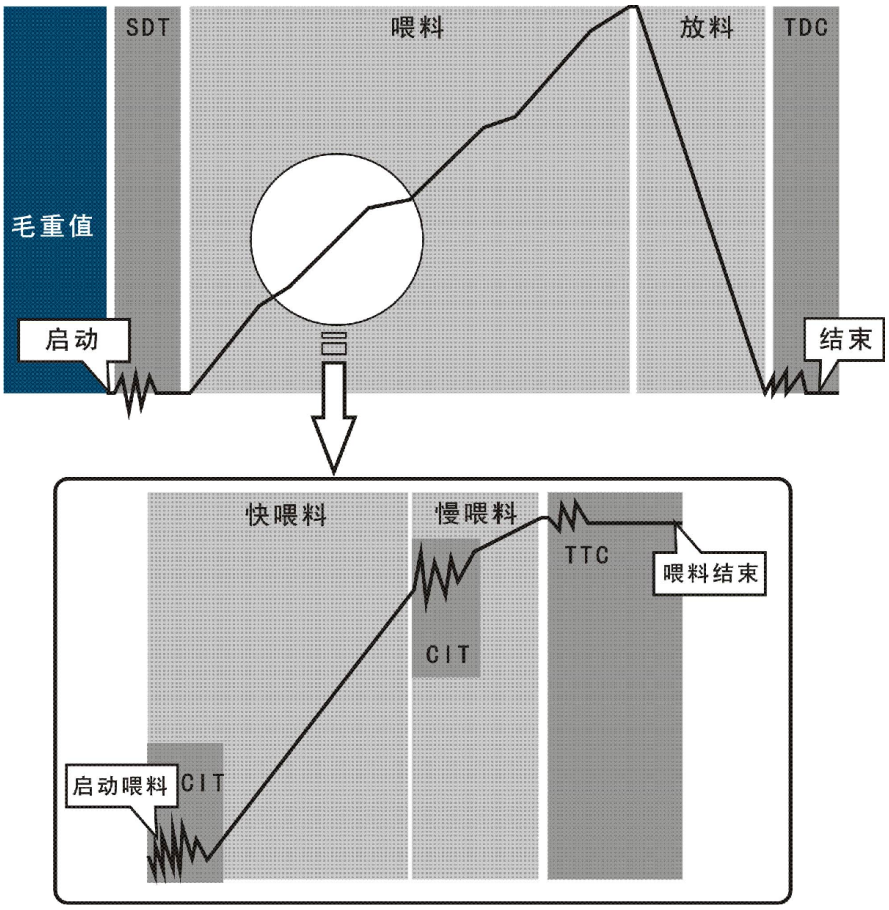
Two CIT during each material feeding, due to material's impact during feeding start & chose, hopper will vibrate to make data unstable, that unstable data maybe bigger than setting data, that make indicator regard it as target data, so there need a CIT to avoid disturbing. It can be set at F6.3.2。

- Testing time delay（TTC）

One TTC for each material feeding, to avoid any disturb; weight terminal will delay time after feeding, and record material data, and over-load checking. To guarantee weighing is stable, that time can be set at F6.3.3。

- Delay discharging time.（TDC）

One TDC for each batching., when hopper discharging, weighing bucket's material is lower than zero range, discharge door delay, then close, that time is set at F6.3.4.



10 Switch test and definition.（F7）

Un-connect the connectors from other system when doing connector test, to avoid un-control mechanical operation.

10.1 Switch input test.

Menu	Instruction	Operation instruction
F7.1 in	Switch input test	Down display shows：**in 0000** ‘0’means no input；‘1’means IN1 is valid；‘2’means IN2 is valid；‘3’means IN3 valid；‘4’means IN4 is valid； For example：IN1、IN3 valid， display：**in 1030** For example：four ways are valid，display：**in 1234**

10.2 Switch output test

Menu	Instruction	Operation instruction
F7.2	Switch input test	Press [Select] to choose switch No., press [Zero] to change condition。 ‘0’：output invalid ‘1’：output valid
out1	(M1)	
out2	(M2)	
out3	(M3)	
out4	(M4)	
out5	5 switch (fast add)	

out6	6 switch (slow add))	
out7	7 switch (discharge)	
out8	8 switch (over-load)	
out9	9 switch (zero condition)	
out10	10 switch (Definable)	
out11	11 switch (Definable)	
out12	12 switch(Definable)）	
outALL	1-12	

10.3 Switch definition（only for R30.20）

Menu	Instruction	Operation instruction
F7.3	Switch definition	Down display shows parameter code.
out 10	10 switch	
out 11	11 switch	
out 12	12 switch	

Switch definition code

Code	instruction
o0	No definition
o1	Material 1 feeding control（M1）
o2	Material 2 feeding control（（M2）
o3	Material 3 feeding control（（M3）
o4	Material 4 feeding control（（M4）
o5	Fast add control（Coarse）
o6	Slow add control（Fine）
o7	Discharge control（Disch。）
o8	Over-load alarm output
o9	Scale zero condition output

11 Indicator parameter initialization F8

Displaying [F7], and press [Tare][Enter]，enter [F8] parameter group.

Down display list instruction

Menu	Instruction	Operation instruction
F2 Int	F2 parameter	F2.1=1; boozer on

	initialization	F2.2=1; tare operation is allowed. F2.3=20; manual zero range 20%，check model4% F2.4=0; zero tracking is limited F2.5=3; dynamic testing range 3d F2.6=5; filter coefficient 5 F2.7=0; open zero is limited.
F3 Int	F3 parameter initialization	F3. 1=0; R30 successive protocols F3. 2=0; R30 protocols not send and check bits F3. 3=2;9600 baud rate F3. 4=0; 8 data bit / no checking bit F3. 5=0; [Enter] print without unit F3. 6=1; communication point address
F6 Int	F6 parameter initialization	F6.1=10 zero allowed range F6.2=5 automatic correction frequency of pre-act data F6.3.1=1.0 sdt =1.0s F6.3.2=0.5 cit =0.5s F6.3.3=1.0 ttc =1.0s F6.3.4=1.0 tdc =1.0s F6.4=05 feeding over-load testing frequency F6.4A=1.0 allowed tolerance range1.0% F6.5=02 auto tare times F6.6=0 auto feeding F6.7=0 auto discharging F6.8=4 material number F6.9.1=2 material 1 dual speed feeding F6.9.2=2 material 2 dual speed feeding F6.9.3=2 material 3 dual speed feeding F6.9.4=2 material 4 dual speed feeding F6.9.10=0 no record when power off during batching F6.9.11=0 mixed model batching
SH Int	Formula data initialization	1-10 formula data Target =1000；target Fine =100； slow add data Preact =50； pre-act data rECI PE =1； formula No.：1 bAtcH =0； default of batching quantity Material consumption added data clear, and finished bathing data zero.
ALL Int	F2、F3、F6、formula parameter initialization	Same as above

12 Maintenances

12.1 Repair tools.

Millimeter sensor simulator, 2.5mm slotted screwdriver, Phillips screwdriver…etc.

12.2 Clearance

Using soft cotton mixed with neutral detergent to clear indicator surface.

Regularly asking professional maintenance staff to check and maintain..

12.3 Usual problems

Problem	Reasons	salvation
No weight change during load and unload weight	1、No calibration, or calibration coefficient lost; 2、Load cell wire unconnected;	1、Re-calibration; 2、Check load cell wires;
Calibration fail	1、Scale is unstable; 2、Load cell wire unconnected or connected wrong.;	1、calibrating when scale is stable; 2、Check load cell wires;
Boot appears “-o.L”	Weight lower than negative display range;	1、Change negative display range; 2、zero; 3、open boot zero; 4、correct zero point;
Boot appears “ o.L”	Weight exceeds over-load display range.	1、Check load cell & scale loads;
Zero fails and remind“No”	1、Exceeding zero range; 2、Scale is unstable; 3、Under batching;	1、Change zero range; 2、Remove load disturbance; 3、Waiting for end;
Tare fails and remind“No”	1、Tare less than1d; 2、Scale is unstable; 3、Under batching;	1、Increase tare; 4、Remove load disturbance; 2、Waiting for end;
Can not revise parameters during calibration	Internal code switch is at measurement protection position, revise is limited.	Switch SW1-1 to “OFF”.

13 Error reminding lists

Reminder	Instruction	Solves
E0	Exceed boot zero range	Check scale, or set boot not zero （F2.7=0）
E4	Each division sensitivity less than 0.5uV	Setting bigger division
E5	Sensitivity is too low to calibrate	1、reload; 2、check systems
E6	Division > 20000 or < 500	Re-input
E7	Input weight wrong, ＝0 or > rated capacity	Re-input right weight
E8	Unload or signal wire is connected wrong	1、reload; 2、check systems;
E9	Compensation range exceeds 20%, second calibration is invalid	1、check mechanical system ;
E11	Reducing model current weight < material 1 target	Stop equipment, and adding material, then discharge.
⊓⊔	Operation limited, normally caused	Operate again when scale stable

	by unstable, exceeding zero range,	
AdCErr	A D conversion chip failure	Change main board
EE-Err	EEPROM recheck failure	Change main board
noSHEt	Empty formula	reset
SHt.Err	Formula setting wrong , for example: target > "0", but not meet (Target)≥(Fine) ≥ (Preact), it fails, if target is "0", it skip checking	reset
SHt.oUr	Material target sum > rated capacity	reset
Err	Formula not meet (Target)≥(Fine) ≥ (Preact)	reset
End	Batching quantity reach default data	Reset the data

Packing list

Pls check following list。

No	content	quantity	note
1	R30 weight control indicator	1	
2	R30 manual book	1	
3	2.5mm screwdriver	1	
4	DIP rectifier diodes IN4007	12	4 for R30.00
5	M3 Sealing screws	2	
6	certificate	1	

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