

GHT-K04-02 Four scale batching weighing controller

1 channel model : GHT-K01-02

2 channel model : GHT-K02-02

4 channel model : GHT-K04-02

Instruction Manual

V2.1

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1 Summary

1.1 Product introduction

Thank you for choosing our products. Before using this product, please read this manual carefully to make this product work to the maximum extent.

This product integrates the control part and touch screen operation part, with friendly interface and convenient operation.

This product uses 24 bit Σ - Δ ADC chip, and the analog signal of bridge load cell is converted into digital signal. It also have 8 DI. 16 DO and 4 AOs, can select 1, 2 and 4 sensor inputs, In addition to the weighing signal transmission function, it can also achieve a large number of control functions.

Suitable for 18-30vdc power supply system. 24 V power supply is recommended.

This product also has the function of sensor circuit detection, that is, when the sensor is not connected or the sensor is faulty (including the wiring falling off, etc.), the corresponding alarm will be given [effective when only one sensor is connected to each channel].

Product features:

1. Signal acquisition, control and touch screen operation are integrated, and the operation is convenient and fast;
2. It can prevent RFI / EMI interference and has strong EMC characteristics;
3. 18-30v DC supply;
4. High speed 24 bit Σ - Δ ADC sampling, each channel more than 500Hz sampling, control output and sampling interval synchronization;
5. Complete sensor fault detection function, such as signal overrun, module sampling fault, sensor line connection fault, etc;
6. Complete communication interface , Standard RS 232 and 485.Optional Ethernet, CAN,etc;

1.2 Safety tips

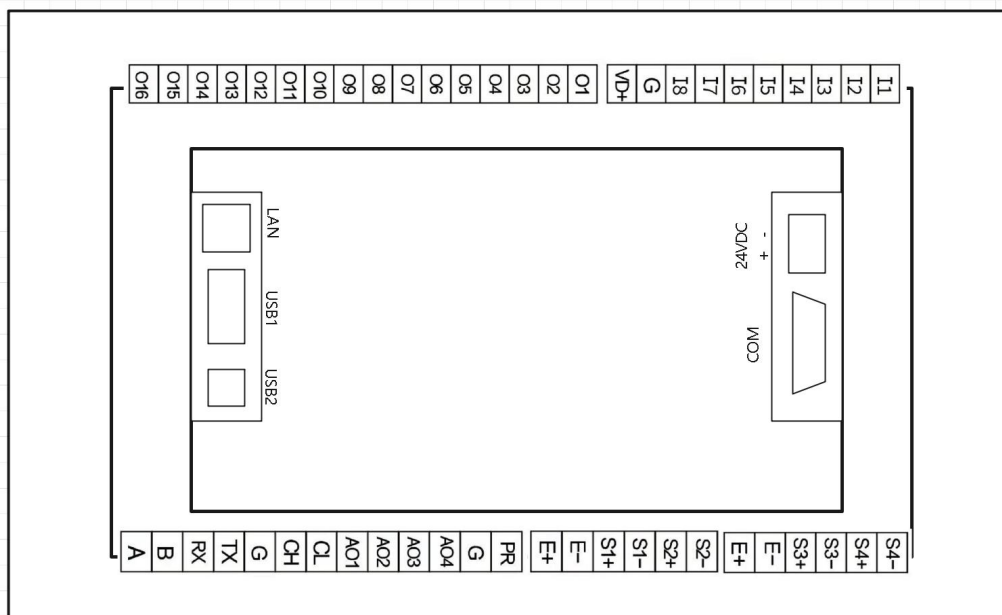


1. The instrument has anti-interference design. Be sure to ground the instrument reliably and separate it from the AC power supply ground wire;
2. Do not use in flammable gas environment;
3. Avoid direct sunlight;
4. The single drive current of DO shall not exceed 0.2A, and the total drive current shall not exceed 2A。

1.3 Technical parameters and dimensions

Measurement signal	-20mV~20mV, Each can drive 6 load cells with 350 ohm
Sampling frequency	500Hz
Accuracy	III level
Resolution	1/500000
DI/DO	8 DI, 16 DO, Low level active, The single drive current of do shall not exceed 0.2A, and the total drive current shall not exceed 2A;4 AO with 4-20mA
Communication	rs 232,rs 485。 Optional with Ethernet or CAN
Nonlinearity	0.005%FS
Power	18-30V DC。 Sensor voltage 5V。
Weight	About 0.7kg
Dimensions	226*163*36
Opening size	215*152
Power waste	< 10W
Temperature	-20~+65°C

1.4 I/O



Explain

1: I1-I8 is DI terminal, valid for G, VD + connected to the positive end of the relay;

2: O1-O16 is DO terminal;

3: A, B is 485 interface; RX, TX, G is 232 interface; CH, CL is CAN interface; AO1-AO4 is AO with 4-20 mA, valid for G; PR is for programming, valid for E+, when the instrument is powered on, it will enter the download state;

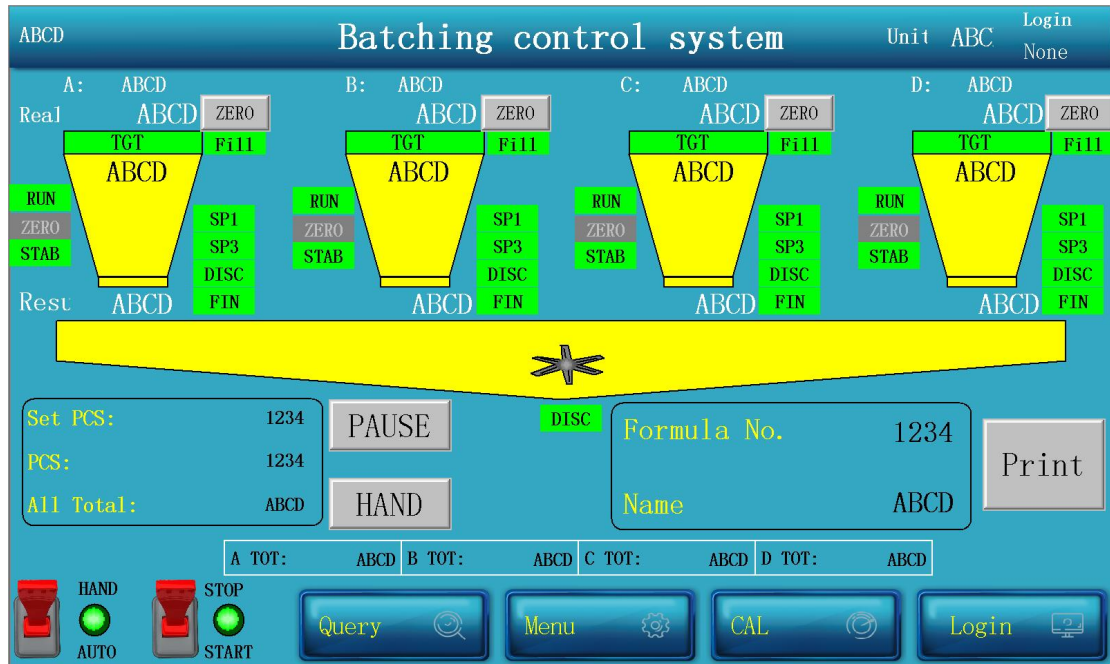
4: E+, E-, S+, S- are loadcell interface, maximum support 4 channels;

5: LAN is Ethernet interface; Usb1 is a U disk interface, which is used to update programs and export data; USB2 standby;

6: 24VDC is the power interface, 24VDC is recommended; COM is an extended 232 interface. Pins 2, 3 and 5 are R, T and G of 232 respectively, and pins 4 and 9 are A + and B - of 485 interface. These two communication ports are used for expansion, and 232 and 485 on the wiring terminal are preferred;

2 Interface and operation method

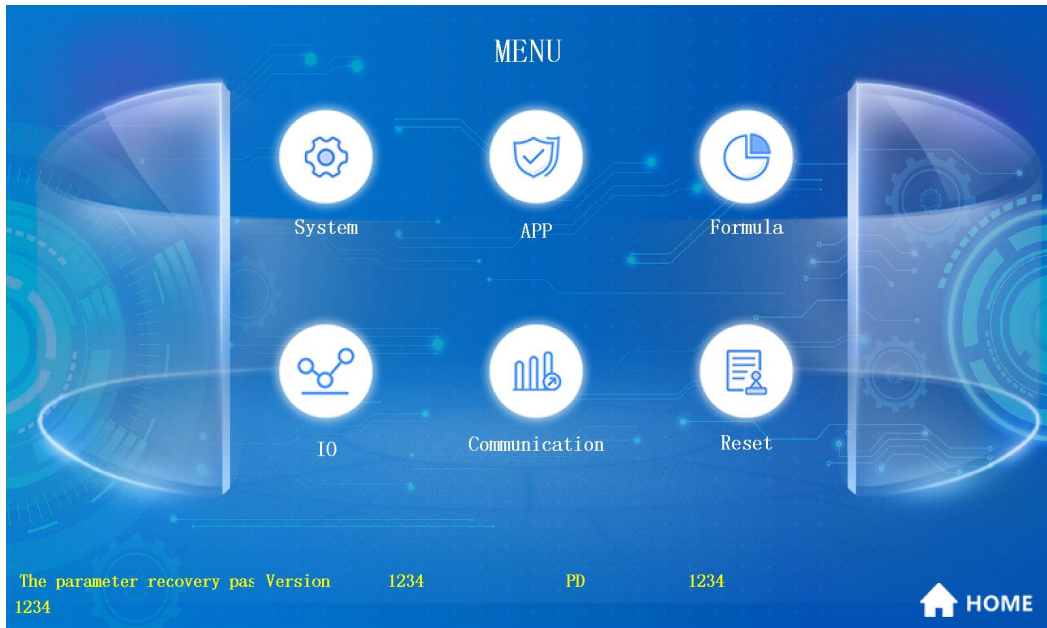
2.1 Weighing interface



1-4 scale interface is available for this instrument. Only 4 routes are taken as an example.

1. AUTO、START can operate without logging in
2. Other operations need to log in first. The password is 123. When none in the upper right corner disappears, the parameter is operable. Enter password 0, login will be cancelled.
3. The CAL password is 888888.

2.2 Parameter display and setting



2.2.1 System parameter

The screenshot shows a "System" parameter setting screen. It has a teal header with the word "System" in white. The screen is divided into two main sections. The left section contains several input fields: "Unit:" with a "Combo Bo" dropdown, "DP:" with a "Combo Bo" dropdown, "Filter 1" with a text box containing "1234", "Filter 2" with a text box containing "1234", "P number" with a text box containing "1234", and "P value:" with a text box containing "1234". The right section contains: "STAB range:" with a text box containing "ABCD", "Zero range:" with a text box containing "ABCD", "STAB time:" with a text box containing "ABCD", "Zero time" with a text box containing "ABCD", and "DIV:" with a "Combo Box" dropdown. At the bottom, there is a status bar showing "1234 Year 1234 Mon 1234 Day 1234 Hour 1234 Min 1234 Sec" and a "Confirmation" button. A "Close" button is located at the bottom right.

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Name	Default(Range)	Describe
Unit	g(g,kg,t,N,kN,lb)	
Dec.Point	1(0-4)	Decimal point setting
DIV	0(0-5)	Division. 0:1 1:2 2:5 3:10 4:20 5:50。
Filter 1	15(0-19)	The larger the value is, the better the filtering effect is, but the weight display lags behind.For weight display and SP3.
Filter 2	10(0-19)	The larger the value is, the better the filtering effect is, but the weight display lags behind.For SP1 and SP2.
P Number		The register number of the parameter can be queried in 3.1.(the number should bigger than 1000)
P value		The parameter value corresponding to the register number.
STAB Range	0.01(0.00-99.99)	When this value is greater than 0, it starts to judge whether it is stable.
STAB Time	0.30(0.00-9.99)	During this time, if the weight change is within the stable range, it will be stable.
Zero Range	0.00(0.00-99.99)	When the value is greater than 0, the auto zero operation is performed.
Zero Time	1.00(0.00-9.99)	During this time, if the weight is within the range and is stable all the time, it will be automatically set to zero. Continuous stability is set to zero only once.

2.2.2 Formula parameter

Formula

	A	B	C	D
Name :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>
TGT :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>
SP1 :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>
SP3 :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>
Zero :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>
High :	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>	<input type="text" value="ABCD"/>

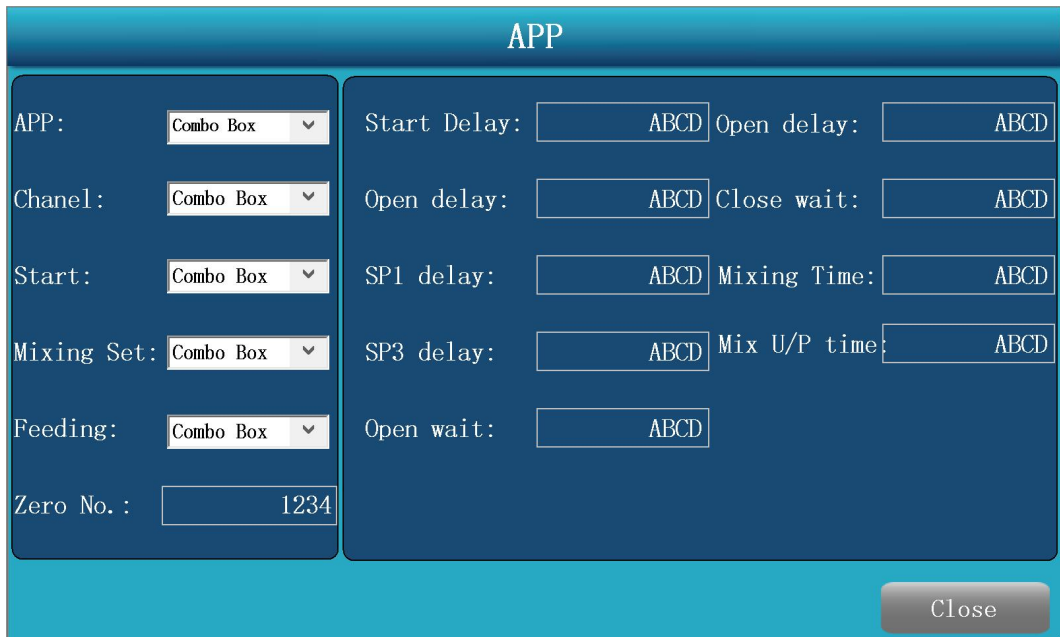
No. :

Name :

1: When the target value is set to 0, the scale will not start;

- 2: The current weight is greater than Zero value, the scale does not start;
- 3: The current weight is greater than High value, the scale does not start. Set to 0, the function fails;

2.2.3 APP parameter



Name	Default(Range)	Describe
Start delay	2.50(0-500.00)	The time delay before starting feeding is set to zero automatically after this time delay.
Open delay	0.30((0-500.00)	After opening the SP1,SP2,SP3 door, it starts to weight after this delay
SP1 delay	0.50((0-500.00)	When closing SP1, delay to compare the weight.
Mix U/P Time	0.50((0-500.00)	Unloading time of mixing tank after mixing
SP3 delay	1.00((0-500.00)	When closing All SP, delay to compare the weight.
Open wait	2.00((0-500.00)	Delay the time to open the discharge door.
Open delay	0.50((0-500.00)	After opening the discharge door, compare the weight after this time.
Close wait	0.50((0-500.00)	When the weight is less than the NULL value, the discharge door will be closed with delay
Mixing Time	0.00(0.00-99.99)	
Chanel	3(1-4)	
APP	0(0-6)	0: Hopper[1 bag] 1:Bag[order] 2:Bag 3: Hopper[SUB] 4:Auto start 5: Hopper[IND] 6: Hopper[Together] Specific functions will be described later in this section
Start	0(0-1)	SP1, SP2,SP3 start sequence

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		0, Meanwhile; 1, Order
Mixing Set	0(0-2)	Mixing work mode 0, No mix; 1, Start mixing when unloading 2, Start mixing after unloading
Feeding	0(0-2)	Bagging mode 0, None; 1, Feeding 1; 2, Feeding 2 Specific functions will be described later in this section [1]
Zero No.	1(0-99)	After this start number is set to zero.

[1] Feeding 1: after underrun, point out once, and then compare the weight until it is qualified; Feeding 2: after underrun, enter the SP3 process and continue feeding until it is qualified.

2.2.4 I/O parameter

The screenshot displays the I/O parameter configuration interface. At the top, there are four sampling value fields (1234) and a 'State' field (1234). The main area is divided into four columns:

- Ix Functions:** I1-I8, each with a green indicator and a value field (1234). Functions include Start, Stop, Unload, Zero, Pause, ST, Unload, Unload, Unload, Auto, Close, and Close.
- AO functions:** A01-A04, each with a value field (1234). Legend: 1: Weight 1, 2: Weight 2, 3: Control.
- Ox functions:** O1-O16, each with a green indicator and a value field (1234). Functions include Fill, SP1, OL, SP3, DISC, FIN, DEV, MIX, and FIN.
- AO test:** A01-A04, each with 'zero' and 'full' indicators and value fields (1234).

At the bottom, there are three buttons: 'I/O test' (with a green indicator), 'Switching out' (in red), and 'Close'.

1: The upper left corner is the sampling value and sampling status, and the upper right corner is the process status to facilitate debugging

2.2.5 COMM parameter

Communication

Addr:

232 Baud:	<input type="text" value="Combo Box"/>	485 Baud:	<input type="text" value="Combo Box"/>	CAN Baud:	<input type="text" value="Combo Box"/>
232 Check:	<input type="text" value="Combo Box"/>	485 Check:	<input type="text" value="Combo Box"/>	CAN Function:	<input type="text" value="Combo Box"/>
232 Function:	<input type="text" value="Combo Box"/>	485 Function:	<input type="text" value="Combo Box"/>		
232 Format:	<input type="text" value="Combo Box"/>	485 Format:	<input type="text" value="Combo Box"/>		

IP Address: Port:

2.2.6 Query data

The 'Query' screen displays a table with the following columns: No., Date, 1# weight, 2# Weight, 3# weight, and 4# weight. A red warning box is overlaid on the table with the text 'Do not pull out the U disc'. Below the table, there are input fields for Date (containing 'ABCD'), 1# weight (containing 'ABCD'), 2# Weight (containing 'ABCD'), 3# weight (containing 'ABCD'), and 4# weight (containing 'ABCD'). At the bottom, there are buttons for 'Clear', 'Copy', 'Query', 'Print', and 'Close'.

No.	Date	1# weight	2# Weight	3# weight	4# weight

Do not pull out the U disc

Date: ABCD 1# weight: ABCD 2# Weight: ABCD
 3# weight: ABCD 4# weight: ABCD

Clear Copy Query Print Close

2.2.7 System calibration

Press the CAL button at the main screen.

The 'Calibration' screen shows two main options: 'Zero' and 'Full'. The 'Zero' option displays 'Zero Value' as 1234 and has a 'Zero' button. The 'Full' option displays 'Coefficient:' as 1234 and has an 'Input Weight' button. At the top, there is a header 'Calibration' and a row of values: No. 1234, Weight ABCD, AD, and 1234. A 'Close' button is located at the bottom right.

Calibration

No. 1234 Weight ABCD AD 1234

Zero

Zero Value 1234

Zero

Full

Coefficient: 1234

Input Weight

Close

Zero: Calibrate the zero

Full: Input the weight on the current scale.

3 Supplementary notes

3.1 modbus Communication protocol

This protocol is compatible with TCP address. The data is 32-bit

Name	Default(Range)	Describe	Address
A Weight		Read: Weight	1
B Weight		Write 0, zero calibration	3
C Weight		Write more than 0, weight calibration	5
D Weight			7
A Result		Read: Packaging results	9
B Result			11
C Result			13
D Result			15
A State		See Note 1 after the table	17
B State			19
C State			21
D State			23
A Total 1		Low value of total	25
B Total 1			27
C Total 1			29
D Total 1			31
A Total 2		High value of total。 Total=Total 2*1000000000+Total 1	33
B Total 2			35
C Total 2			37
D Total 2			39
A PCS			41
B PCS			43
C PCS			45
D PCS			47
A AD State		Bit 0: disconnection bit 2: signal overflow	101
B AD State		bit 3: sampling fault	103
C AD State		The sampling fault may be an external sensor problem	105
D AD State		or an instrument sampling module fault	107
A AD value			109
B AD value			111
C AD value			113
D AD value			115
DI State		Bit 0 corresponds to DI 1	117

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DO State		Bit 0 corresponds to DO 1	119
P number.		The register number of the parameter can be queried in 3.1.(the number should bigger than 1000)	997
P Value		The parameter value corresponding to the register number.	999
A Zero			1001
B Zero			1003
C Zero			1005
D Zero			1007
A Coefficient			1009
B Coefficient			1011
C Coefficient			1013
D Coefficient			1015
Filter 1	10(0-19)	The larger the value is, the better the filtering effect is, but the weight display lags behind.For weight display and SP3.	1019
Filter 2	15(0-19)	The larger the value is, the better the filtering effect is, but the weight display lags behind.For SP1 and SP2.	1021
DIV	0(0-5)	0:1 1:2 2:5 3:10 4:20 5:50。	1023
STB Range	0.01(0.00-99.99)	When this value is greater than 0, it starts to judge whether it is stable.	1025
STB Time	0.30(0.00-9.99)	During this time, if the weight change is within the stable range, it will be stable.	1027
Creep Range	0.00(0.00-99.99)	When this value is greater than 0, creep correction is carried out.	1029
Creep Time	10.00(0.00-99.99)	In this time, the weight change is in the Creep Range and is stable, so the creep correction is carried out.	1031
Zero Range	0.00(0.00-99.99)	When the value is greater than 0, the auto zero operation is performed.	1033
Zero Time	1.00(0.00-9.99)	During this time, if the weight is within the range and is stable all the time, it will be automatically set to zero. Continuous stability is set to zero only once.	1035
Unit	g(kg,t,N,kN,lb)		1067
Dec.Point	1(0-4)	Decimal point setting	1069
Chanel	3(0-3)	0: 1 CH: 1,2 CH: 2, 3 CH: 3,4 CH	1071
APP	0(0-6)	Refer to 2.2.3 for specific functions	1073
A Null	100(1-999999)	Threshold value used to judge empty scale bucket	1077
B Null			1079
C Null			1081
D Null			1083
A Target	5000(1-999999)		1085

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B Target			1087
C Target			1089
D Target			1091
A SP1	2000(1-999999)		1093
B SP1			1095
C SP1			1097
D SP1			1099
A SP3	500(1-999999)		1109
B SP3			1111
C SP3			1113
D SP3			1115
Start delay	2.50(0-500.00)	The time delay before starting feeding is set to zero automatically after this time delay.	1117
Open delay	0.30((0-500.00)	After opening the SP1,SP2,SP3 door, it starts to weight after this delay	1119
SP1 delay	0.50((0-500.00)	When closing SP1, delay to compare the weight.	1121
SP2 delay	0.50((0-500.00)	When closing SP2, delay to compare the weight.	1123
SP3 delay	1.00((0-500.00)	When closing All SP, delay to compare the weight.	1125
Open wait	0.00((0-500.00)	Delay the time to open the discharge door. In the Bag[Order] mode, the bag clamping of scale a is misplaced, that is, scale B loosens the bag. After this time, scale a operates bag clamping.	1127
Open delay	0.50((0-500.00)	After opening the discharge door, compare the weight after this time.	1129
Close wait	0.50((0-500.00)	When the weight is less than the NULL value, the discharge door will be closed with delay	1131
Mixing time	0.00(0.00-99.99)		1133
Mix U/P time	0.00(0.00-99.99)	Unloading time of mixing tank after mixing	1133
I1 Function	0(0-99)	See 2.2.4 interface parameters for details	1157
I2 Function			1159
I3 Function			1161
I4Function			1163
I5 Function			1165
I6 Function			1167
I7 Function			1169
I8 Function			1171
o1 Function	0(0-99)	See 2.2.4 interface parameters for details	1173
o2 Function			1175
o3 Function			1177
O4 Function			1179
O5 Function			1181

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O6 Function			1183
O7 Function			1185
O8 Function			1187
O9 Function			1189
O10 Function			1191
O11 Function			1193
O12 Function			1195
O13 Function			1197
O14 Function			1199
O15 Function			1201
O16 Function			1203
Ao1 Function	0(0-99)	See 2.2.4 interface parameters for details	1205
Ao2 Function	0(0-99)		1207
Ao3 Function	0(0-99)		1209
Ao4 Function	0(0-99)		1211
Zero No.	1(0-99)	See 2.2.3 interface parameters for details	1213
Start	0(0-1)		1215
Stop number	0(0-999999)	Stop the machine after passing the pcs	1221
Mixing Set	0(0-2)	Mixing work mode 0, No mix; 1, Start mixing when unloading 2, Start mixing after unloading	1223
A Point close time	0.00(0.00-99.99)	The closing time and opening time should be greater than 0 when the SP3 inching function is needed.	1225
B Point close time			1227
C Point close time			1229
D Point close time			1231
A Point open time	0.00(0.00-99.99)		1233
B Point open time			1235
C Point open time			1237
D Point open time			1239
Supplementary materials	0(0-2)	See 2.2.3 interface parameters for details	1241
Supplementary materials Time	0.00(0.00-99.99)	SP3 ON time when supplementary materials.	1243
A Deviation	0(0-999999)	The weight error is acceptable within this range.	1245
B Deviation			1247
C Deviation			1249
D Deviation			1251
Total set	0(0-999999999)	If the setting is greater than 0, the cumulative control mode is adopted. Reach the set cumulative shutdown	1253

Explain1:

State A .00bit A Run; .01bit A Fill; .02bit A SP1; .04bit A SP3; .05bit A Final; .06bit A Discharge; .07bit A Stable; .08bit A Zero; .09bit HAND/AUTO
.07bit B Run; .08bit B Pack; .09bit B SP1; .10bit B SP2; .11bit B SP3; .12bit B Final; .13bit B Discharge;

State B .00bit B Run; .01bit B Fill; .02bit B SP1; .04bit B SP3; .05bit B Final; .06bit B Discharge; .07bit B Stable; .08bit B Zero; .09bit Mix

State C .00bit C Run; .01bit C Fill; .02bit C SP1; .04bit C SP3; .05bit C Final; .06bit C Discharge; .07bit C Stable; .08bit C Zero; .09bit All Run

State D .00bit D Run; .01bit D Fill; .02bit D SP1; .04bit D SP3; .05bit D Final; .06bit D Discharge; .07bit D Stable; .08bit D Zero; .09bit Unloading of mixing tank

3.2 Other communications

Please consult the manufacturer or customize.

3.3 Other functions

If you need the function of Ethernet network, please contact the manufacturer in advance. The configuration and testing tools of Ethernet can be obtained from the manufacturer.

3.4 Print format

Print sheet

```
-----  
2022-01-01 10:10:10  
#1      1111.1kg  
#2      2222.2kg  
#3      3333.3kg  
#4      4444.4kg  
-----
```