



杰 • 曼 • 科 • 技

GMT-H4

Instruction manual

110611070002

V01.00.03

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The product is powered by DC24V power supply, misuse of AC220V power supply will permanently damage the instrument.

Keep the instrument well grounded.

The product is an electrostatic sensitive device. Take ESD measures during use and maintenance

Product standard: GB/T 7724-2023
Verification Regulation: JJG 649-2016
CMC accuracy grade 3 (6000e); Guangdong system 0000000048;
Safety certification: CE

Catalog

Chapter 1 Overview	- 1 -
1.1 Functions and Features	- 1 -
1.2 Technical Specifications	- 1 -
Chapter 2 Panel and keys	- 2 -
2.1 Panel Diagram	- 2 -
2.2 Key Description	- 3 -
Chapter 3 Installation and Wiring	- 4 -
3.1 Connect power cables to the controller	- 4 -
3.2 Loadcell Connection	- 4 -
3.3 IO interface connection	- 5 -
3.4 Serial Port Connection	- 5 -
3.4.1 Troubleshooting Serial Port	- 6 -
3.5 Network Port Connection	- 6 -
3.5.1 Network port troubleshooting	- 6 -
Chapter 4 Menu overview	- 7 -
4.1 Parameter selection and setting	- 7 -
Chapter 5 Calibration operation	- 9 -
5.1 CAL Scale parameters	- 9 -
5.2 CAL Zero	- 11 -
5.3 CAL Weight	- 12 -
5.4 Calibration with theoretical value	- 12 -
5.5 Material CAL	- 13 -
5.6 Angle difference correction	- 14 -
Chapter 6: Scale parameters	- 15 -
6.1 Scale Parameters Content	- 15 -
Chapter 7 Basic parameters	- 17 -
7.1 Basic parameters content	- 17 -
7.2 Zero operation	- 18 -
Chapter 8 Application parameters	- 19 -
8.1 Input port configuration	- 19 -
8.2 Configuring Output Ports	- 20 -
8.3 Comparator configuration	- 21 -
8.4 Application Examples	- 21 -
Chapter 9 Communication parameters	- 23 -
9.1 Communication Parameters	- 23 -
9.2 Example for printing format	- 26 -
9.3 Built-in Web pages	- 26 -
Chapter 10 System Parameters	- 27 -
10.1 I/O Test	- 28 -
10.2 Communication Test	- 28 -

10.2.1 Receive test	- 28 -
10.2.2 Send test	- 28 -
Chapter 11 Communication Protocols and Addresses	- 29 -
11.1 Modbus Protocol	- 29 -
11.1.1 Function Code and Exception Code Description.....	- 29 -
11.1.2 Transmission mode	- 29 -
11.1.3 Modbus Communication Address Table.....	- 29 -
11.2 GM-Cont (Continuous Send Protocol).....	- 45 -
11.3 Customize Modbus.....	- 46 -
11.4 PROFINET communication	- 47 -
11.4.1 Circular Address Parameters	- 47 -
11.4.2 Device Description file GSD.....	- 51 -
11.5 EthernetIP Communication	- 51 -
11.5.1 Circular Address parameters.....	- 51 -
11.5.2 Acyclic parameters	- 55 -
11.5.3 Device description file EDS	- 55 -
11.6 CCLink IE Field Basic Communication.....	- 55 -
11.6.1 Loop address parameters	- 55 -
11.6.2 Acyclic parameters	- 58 -
11.6.3 Device Description file CSP.....	- 58 -
Chapter 12 Product dimensions.....	- 59 -

Chapter 1 Overview

1.1 Functions and Features

Shell Type	Hanging/Desktop mount method, stainless steel housing	
Display	256*64, 2.8 "OLED	
Preset Point function	8 way comparator, 5 comparison methods optional	
Loadcell Channel	Four separate analog loadcell input channels. Support to choose more than two channels to combine, you can set the parameters after the combination.	
Ports	Loadcell port	4-way seven-wire analog loadcell port for up to 4 350Ω loadcells
	1 way 485 port	Support modbus RTU and GMCont continuous mode
	1 way 232 port	
	Optional port 1	4 in 6 out transistor input/output interface
	Optional port 2	Single network port communication port
		Dual network port communication port
		Profinet bus interface
		Ethernet/IP bus interface
		CCLink-IE bus interface
		GPRS module

1.2 Technical Specifications

Power supply	24VDC (18 to 30VDC)
Shell size	200*150*120(mm)
Product weight	1771g
Certification use environment	-10 ~ 40°C; No condensation in 90%R.H
Use environment	-40 ~ 70°C; No condensation in 90%R.H
Storage environment	-40 ~ 80°C; No condensation in 90%R.H
Load cell excitation voltage	5V 200mA(MAX)
Load cell requirements	4 analog loadcell interfaces, each can connect 4 350Ω loadcells, support 1mV/V, 2mV/V, 3mV/V sensitivity
Input sensitivity	0.1 uV/d
Input range	0.00 ~ 15mV(3mV/V for loadcell)
Nonlinear	0.01 % F.S
A/D Sampling speed	50, 100, 200, 400, 800 (SPS)
Maximum display accuracy	1/100000
Keys	6-key sounding keyboard
Decimal point position	0, 0.0, 0.00, 0.000, 0.0000; 5 optional
Overload Display	999999

Chapter 2 Panel and keys

2.1 Panel Diagram



Status light Instructions:

Status Light	Description	Instruction
STAB	Stable indicator	When the weight change of the material on the weighing platform or hopper is within the stable range, it means that the weight is stable, and the indicator lights up
ZERO	Zero	When the weight of the material on the weighing platform or hopper is $0 \pm 1/4d$, the indicator lights up
NET	Net weight indicator	Default: net weight indicator, which lights up when the displayed weight is net
COM	Serial/network port communication indicator	This indicator blinks during communication

Unit indicator description:

Unit Indicator	Instruction
● t	If the current unit is t , the indicator lights up
● g	If the current unit is g , the indicator lights up
● lb	If the current unit is lb , the indicator lights up
● kg	If the current unit is kg , the indicator lights up

Description of the display area: set the parameter information displayed on the main interface through **【System parameter】** -- **【65 screen Set】** -- **【653 screen Loop】** , optional loadcell weight, loadcell voltage, loadcell pressure, loadcell internal code.

2.2 Key Description

GMT-H4 has a total of 6 key functions. The functions of short press and long press are different. The key sheet is shown in the picture as below:

Keys	Operating interface	Short Press	Long Press
	Home Screen	Tare(In gross mode)/ Clear tare(In net mode)	Gross/net weight switch
	Menu interface	Switch to the previous suboption	/
	Numeric Input	Number or letter +1	/
	Option class	Switch to the previous suboption	/
	Home Screen	Zero (valid in gross mode)	/
	Menu interface	Switch to the next suboption	/
	Numeric Input	Number or letter -1	/
	Options class	Switch to the next suboption	/
	Home Screen	Installation and debugging interface	
	Menu interface	Switch to the previous main option	/
	Numeric Input	Move the number position to the left	/
	Option class	/	/
	Home screen	Interface switching of weight, loadcell voltage, internal code value, etc	View error messages or operation log Print
	Menu interface	Switch to the next main option	/
	Numeric Input	Move the number position to the right	/
	Option class	/	/
	Home screen	Enter Menu	Quickly view the software version and compile date, network port firmware information
	Menu interface	Confirm selection	/
	Numeric input	Confirm selection	/
	Option class	Confirm selection	/
	Home Screen	/	/
	Menu interface	Return to previous level	/
	Numeric input	Exit	/
	Option Class	Back to the current option	/

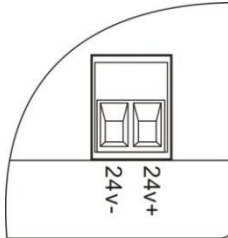
Interface description:

1) The installation and debugging interface is used when installing sensors in a weighing system composed of multiple sensors. If the sensors are not fully stressed, they can be installed and debugged through the protocol on this interface.

Chapter 3 Installation and Wiring

3.1 Connect power cables to the controller

The GMT-H4 weight transmitter enables 24V power supply. The wiring of the power terminal is shown below:



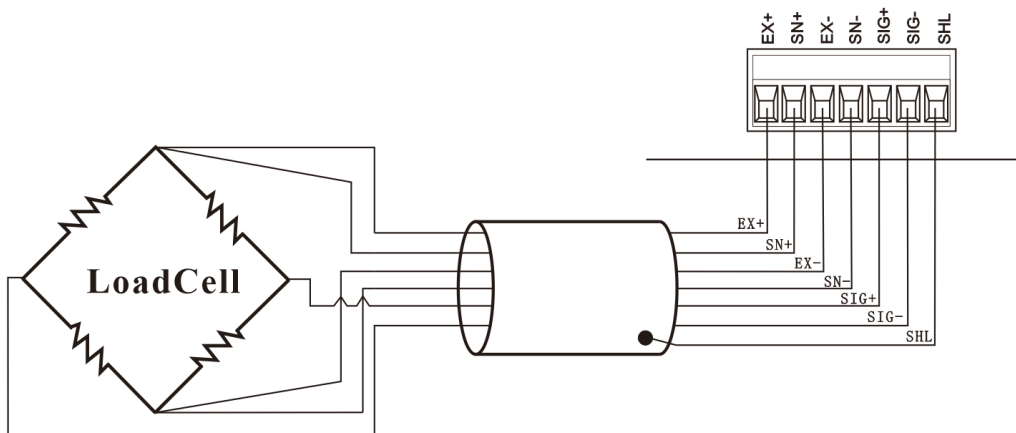
**NOTE: THIS PRODUCT USES 24V DC POWER SUPPLY.
USING 220V AC POWER WILL PERMANENTLY DAMAGE THE
INSTRUMENT.**

3.2 Loadcell Connection

GMT-H4 weight transmitter provides four-channel loadcell connection, all need external resistance strain bridge load cell, each port of the connection terminal is assigned to: (Note: n=1,2,3,4)

Ports	EXn+	SNn+	EXn-	SNn-	SIGn+	SIGn-	SHL
Six-wire system	Power positive	Sensitive positive	Power negative	Sensitive negative	Signal Positive	Signal negative	Shielded wire
Four-wire system	Power positive		Power negative		Positive signal	Negative signal	Shielded wire

※ When connecting a four-wire loadcell, the EXn+ and SNn+ ports, EXn- and SNn- ports must be short-circuited. Otherwise, the weight data of the instrument will not read properly.



Note:

1. Because the loadcell output signal is an analog signal that is more sensitive to electronic noise, the loadcell wiring should be shielded cables, and be laid separately from other cables, especially away from AC power;

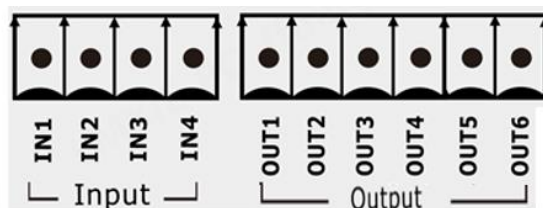
2. Four-wire loadcell can be selected for occasions where the transmission distance is short and the temperature change is not large or the accuracy requirements are not high; However, for applications with

long transmission distance or high accuracy requirements, six-wire loadcell should be selected;

3. For the application of multiple loadcell in parallel, it is necessary to ensure that the sensitivity of each loadcell (mV/V) is consistent.

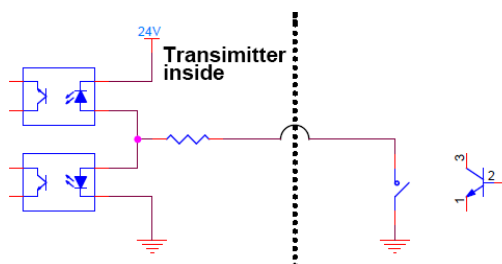
3.3 IO interface connection

GMT-H4 weight transmitter IO is optional interface, order must be declared. 4 input port, 6 output port, IO input, output port factory default: low level effective. Transistor output mode, each drive current: 200mA.



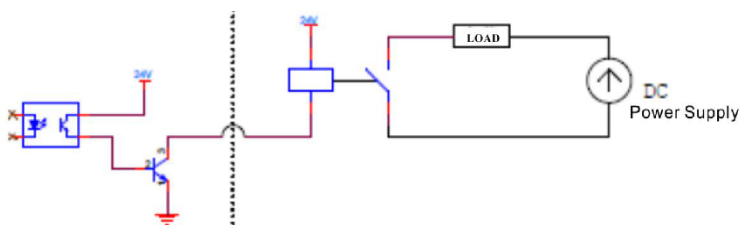
IO interface diagram

Instrument input interface schematic diagram:



Low level mode

Instrument output interface schematic diagram:



Low level mode

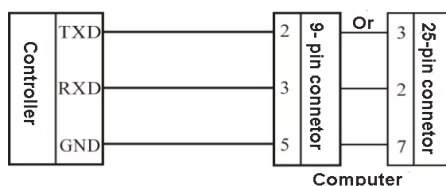
Instrument IO input, output default: no definition, can be set by [section 8](#) defined function.

3.4 Serial Port Connection

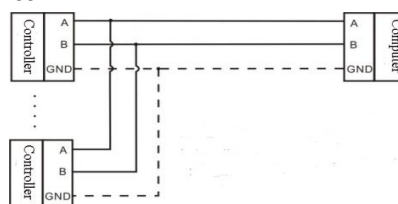
The GMT-H4 instrument is equipped with two serial ports as standard: one RS485 port and one RS232 port.



RS232 connection mode:



RS485 connection mode:



- ※ In RS485 mode, GND is the signal ground. In the case of serious interference, low resistance wires should be used to connect the signal ground, so that the ground potential of each node is equal, which can significantly improve the communication quality.
- ※ The GND must be connected in RS232 mode.

3.4.1 Troubleshooting Serial Port

If the serial port is not communicating, check:

- Check the cable connection according to the above connection method; Make sure the connection is correct.

The RS232 interface must be connected to all three wires, Rx, Tx, GND.

The RS485 port must be connected to cables A and B.

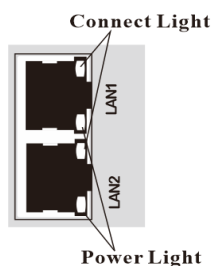
- Ensure that the parameters of the connection port are consistent with those of the host.

Slave ID, baud rate, data format and communication protocol must be consistent with the host computer and PLC.

3.5 Network Port Connection

GMT-H4 products support TCP-IP dual network port ,single network port and bus interface. Support Modbus TCP network port protocol, bus protocol: Profinet, Ethernet, CCLink and GPRS module (all are optional functions, order need to declare).

- 1) Dual network port option, support TCP protocol.
- 2) PN, Ethernet IP, CCLink IE communication, can access any network port of the instrument for communication.



3.5.1 Network port troubleshooting

If the network port is not communicating, check:

- Check network port indicators.

1) Dual network port /PN, EthernetIP, CCLink **IE** communication, check whether the hardware connection is normal, instrument power light is steady on. The network cable is connected normally, and the connection light is blinking.

- Check whether the communication protocol is consistent with that of the host computer and PLC.

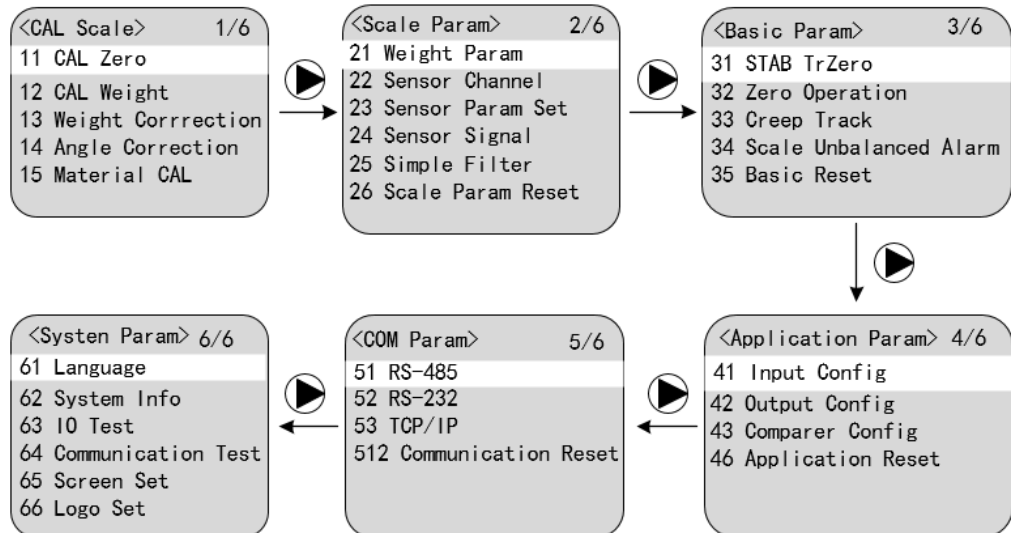
○ Confirm that GMT-H4 can be pinged from the network. If not, check the hardware interface section.

- Check whether IP conflicts exist.

- Restart the instrument.

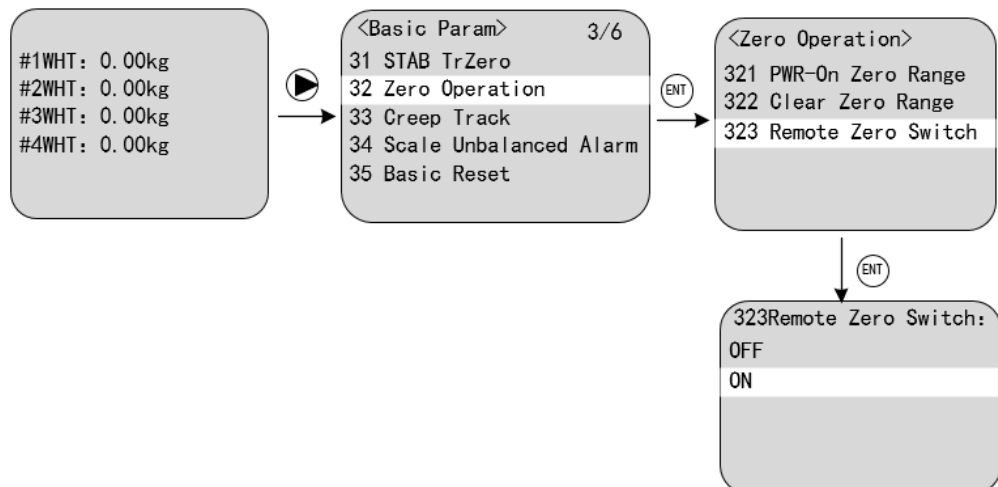
Chapter 4 Menu overview

Menu interface switch:

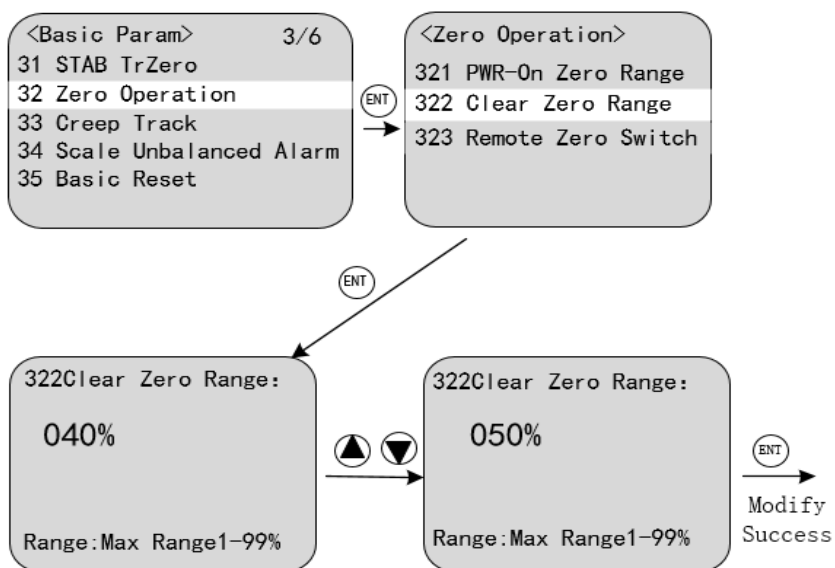


4.1 Parameter selection and setting

4.1.1 Parameter selection: (Take remote zero switch parameter as an example)



4.1.2 Parameter Setting: (Set the power-on zero range from 40% to 50%)



- ※ When the setting is complete, the number blinks. Press **ENT** to complete the parameter setting.
- ※ During the setting process, press **ESC** to exit the current parameter.
- ※ Please refer to the second chapter 2.2 [Key Description.](#)

Chapter 5 Calibration operation

When the GMT-H4 weight transmitter or any part of the weighing system is changed for the first time and the current device calibration parameters cannot meet the user's requirements, the display should be calibrated. Calibration can determine the system zero position, gain, etc., of the weighing system.

5.1 CAL Scale parameters

Parameters	Initial values	Instructions
11 CAL Zero		Perform zero calibration operation
111 Auto Zero CAL		After empty the weighing platform, press the Enter key to automatically record the current voltage value status as zero voltage.
112 One Click Manual Input		Range: -15.0000-15.0000mV , record the signal voltage value when the weighing platform is empty, as the zero point when the manual input.
113 Independ Manual Input		Use a multimeter to measure the voltage between SIG+ and SIG- at the loadcell port of each channel. Manually input the voltage with 4 decimal points as the zero point voltage to perform zero calibration for the 4 channels respectively. Range: -15.0000-15.0000mV
12 CAL Weight		Perform a calibration with weight operation
121 CAL Point 1	calibration weight points	
13 Weight Correction		
132 Weight correction factor	1.00000	After calibration, if the zero point is correct, the weight is biased, which can be used to correct the weight value. The calculation method of the value is: if the instrument displayed weight is A , but the weight is B after weighing, the calculation method of the correction factor is : $(\text{actual weight } \mathbf{B} - \text{current correction factor}) / \text{The displayed weight } \mathbf{A}$.
133 Zero Return	//	This calibration method is used when the weighing on the weighing platform is inaccurate and the displayed weight does not match the weight of the hopper. By restoring the zero-point calibration operation, the current calibration linearity and gain weight issues are corrected to restore the actual weight in the current hopper.The current actual weight is known, and the instrument automatically calculates the zero point after the weight is input
134 Weight Compensate Channel	//	The channel number used to select the compensation channel, channel 1 to 4, press ENTER to switch ☒ ☐ to select the channel to access the loadcell

14 Angle Correction		
141 Angle Correction Sample	//	Confirm the Angle difference sampling, follow the prompt steps to perform the corresponding operation (prompt whether to empty the weighing platform, otherwise exit the Angle difference sampling, if yes, start the Angle difference sampling, select any Angle loading weight for press the corner, press “ Enter ” after stability, check the 142 Angle difference coefficient will have the corresponding change after sampling). (Note: The number of press corner is determined according to the number of selected channels, and the order of press corner is performed from small to large according to the selected channel number)
142 Angle Correct Factor	1.00000	The Angle difference coefficient of the selected channel can be manually modified, the Angle difference coefficient is displayed with the number of channels. When the level or height of the loaded weighing items is inconsistent, it will cause weighing error, then it is necessary to adjust the Angle difference coefficient to make the system work normally. Range: 0.00000~8.00000 .
143 Angle Coefficient Reset	//	Confirm that the Angle difference is reset and reset the Angle difference coefficient to the default value: 1.0000 .
15 Material CAL		Perform material calibration operations
151 Material CAL Input	0	After loading the weight, input the corresponding weight value. range: 0- Maximum range.
152 Material CAL Reset	//	Reset material calibration data
153 CAL Point Change	0	After 10 points of material calibration, choose to view the gain millivolts at which point, range: 0-10, 0 indicates that it is not displayed
154 CH1 Gain Volt	0	Displays the number of gain millivolts corresponding to the " CAL Point Change ", relative to the previous calibration point
155 CH1 Gain WT	0	Displays the gain weight corresponding to the " CAL Point Change ", relative to the previous calibration point
156 CH2 Gain Volt	0	Displays the number of gain millivolts corresponding to CAL Point Change”, relative to the previous calibration point
157 CH2 Gain WT	0	Displays the gain weight corresponding to the " CAL Point Change ", relative to the previous calibration point
158 CH3 Gain Volt	0	Displays the number of gain millivolts corresponding to the " CAL Point Change ", relative to the previous calibration point

159 CH3 Gain WT	0	Displays the gain weight corresponding to the " CAL Point Change ", relative to the previous calibration point
1510 CH4 Gain Volt	0	Displays the number of gain millivolts corresponding to the " CAL Point Change ", relative to the previous calibration point
1511 CH4 Gain WT	0	Displays the gain weight corresponding to the " CAL Point Change ", relative to the previous calibration point

Note: ①Before the Angle difference sampling, the Angle difference reset must be performed first. If it is unstable in the process, the alarm will prompt "sampling is unstable". If the calculated coefficient is negative after the sampling is completed, it will prompt "Angle difference sampling error".

5.2 CAL Zero

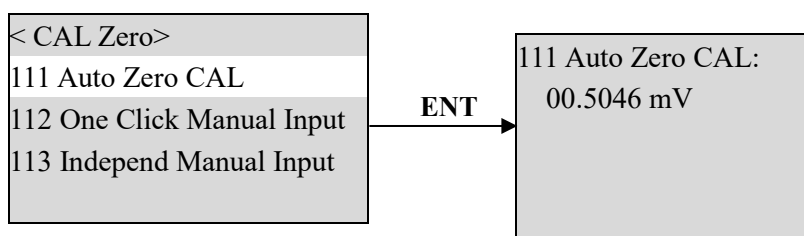
CAL Zero means zero calibration of the weighing platform.

There are three ways to calibrate zero: Auto Zero CAL, One Click Manual Input and Independ Manual Input. When the new equipment or weighing structure is adjusted, the " Auto Zero CAL " method must be used for zero calibration.

Auto Zero CAL

Successful calibration condition: weighing platform is stable.

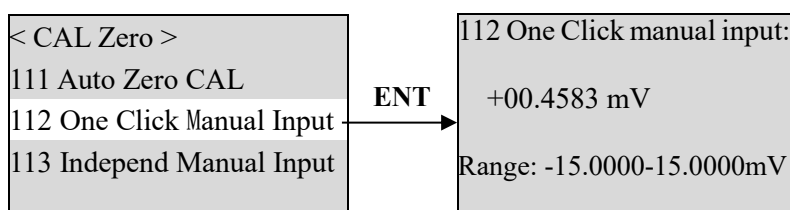
The instrument interface displays the sum of the selected channel loadcell voltage value/or the millivolt value of combined channels. After emptying the weighing platform, press the **Enter** key, calibrate the current state as zero point.



One-Click Manual Input:

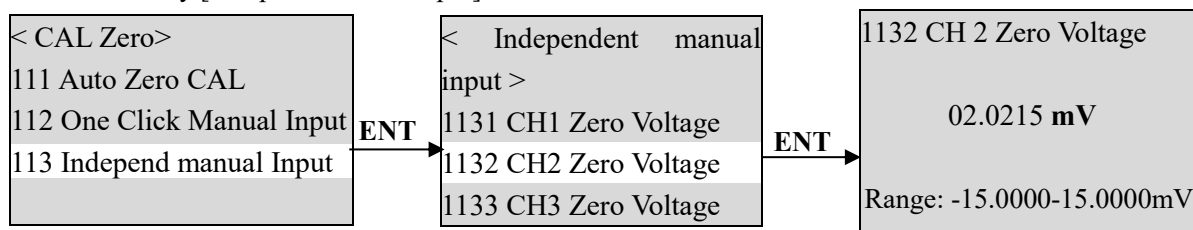
Manually input zero corresponding millivolt value, that is, manually calibrate zero.

Here is the manual one-time input 4 zero calibration, combined the selected channels to calibrate together.



Independ Manual Input:

If a loadcell channel is not allowed, the zero point of the corresponding channel can be calibrated by [Independent Manual Input].



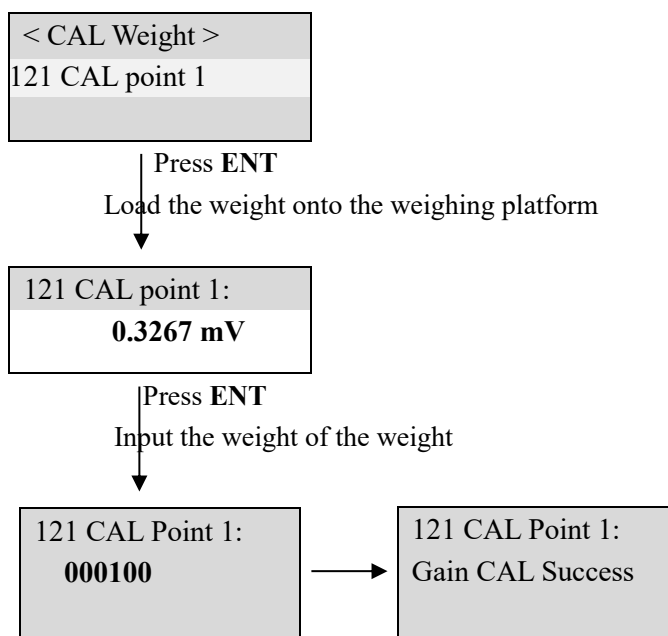
※ Generally used for calibration without weight, the data recorded when the weight calibration recorded value for manual input.

5.3 CAL Weight

Calibration With weight means weight calibration with standard weights. Note: It is necessary to set the theoretical value switch to OFF in [Scale Param] - [Weight Param] - [Theory Switch]

Calibration method:

※ The zero point calibration operation should be completed before the calibration with weight.



5.4 Calibration with theoretical value

Theoretical value calibration refers to the weight calibration operation by connecting the loadcell sensitivity and loadcell range value through input.

There are two ways to calibrate theoretical values:

- 1) Quick setting: The loadcell sensitivity and loadcell range of the selected channel can be set at one time in the "Quick Set"

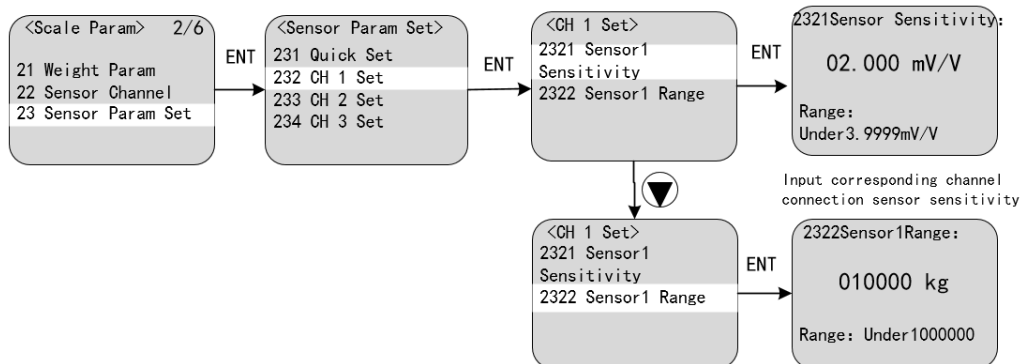
- 2) Independent channel setting: The loadcell sensitivity and loadcell range of the selected channel can be set separately

Theoretical value calibration needs 3 steps:

- 1) Turn on the "Theory Switch".
- 2) Set the loadcell sensitivity (such as connecting multiple loadcells, Input the average sensitivity)
- 3) Set the total loadcell capacity (if connecting multiple loadcells, input the total loadcell capacity)

* Turn on the theoretical value switch in [Scale param] - [Weight Param] - [Theory Switch] before entering the weigh-free calibration interface. The other theoretical values can be calibrated according to the above steps.

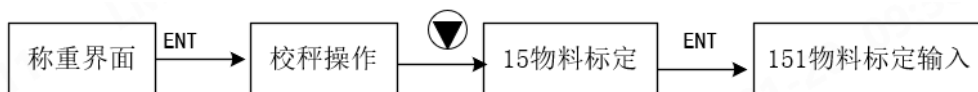
The theoretical value calibration process is as follows (take channel 1 as an example)



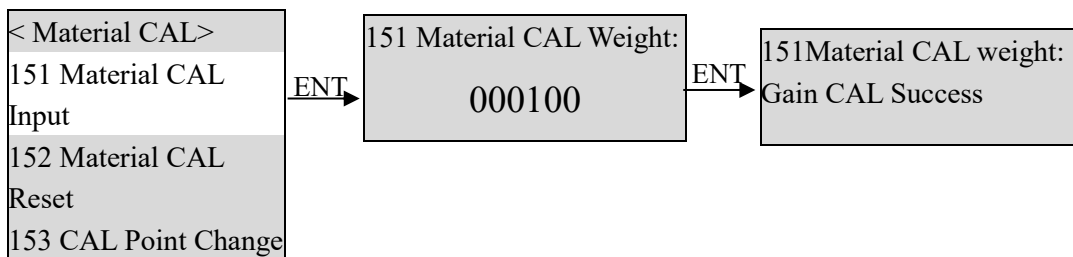
5.5 Material CAL

It is necessary to turn off the theoretical value switch in [Scale Param] - [Weight Param] - [Theory switch]

1. Follow the following steps to enter the interface of material calibration



2. Put the weight on the weighing platform and input the real weight of the weight in [151 Material CAL Input]



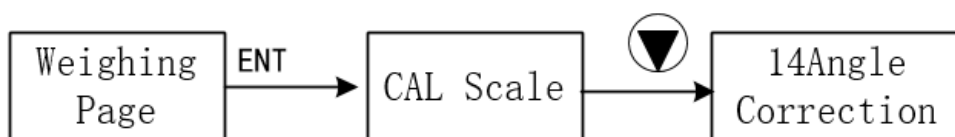
3. Continue to increase the weight, continue to write the weight of the total weight, at this time to complete the second point of material calibration; 10 points of material calibration can be performed

Note: ①The material calibration can be performed at any time. There is no need for zero-point calibration operation when calibrating materials. ②After one gain calibration operation, remove the material calibration, and calculate the weight according to the gain calibration; After the operation of a material calibration, the weight is calculated according to the material calibration

5.6 Angle difference correction

When the same weight is placed in different positions of the weighing platform, there is a non-negligible difference in the weight value obtained by the instrument weighing, indicating that there is an Angle difference on the weighing table, and it is necessary to adjust the Angle difference.

Follow the following steps to enter the menu of Angle difference correction



Angle Correction: It is the method of pressing heavy objects in different positions of the weighing platform to achieve automatic angle difference adjustment. Simple operation, according to the instructions can be operated once, to solve the traditional angle difference adjustment operation complex, low precision these problems. The correction process is as follows: enter the Angle difference correction sampling

Menu	Instruction
Start angle difference correction	Wait until the weighing platform is stable and the weights are not pressed
Comfirm position No. 1	Place the weight on the weighing platform and when the weighing platform is stable, press ENTER
Comfirm position No. 2	Move the weight position until the weighing platform is stable and press ENTER
Comfirm position No. 3	Move the weight position until the weighing platform is stable and press ENTER
Comfirm position No. 4	Move the weight position until the weighing platform is stable and press ENTER

Note: The number of press corner depends on the number of selected channels, and the sequence of press corner should be performed from small to large according to the selected channel number

Chapter 6: Scale parameters

6.1 Scale Parameters Content

Parameter Items		Default	Instructions
21 Weight parameters			
211 Unit		kg	Range: t; kg; g; lb
212 Decimal Point		0	Range: 0; 0.0; 0.00; 0.000; 0.0000
213 Division		1	The minimum change display value Range: 1,2,5,10,20,50
214 Full Scale		999999	The maximum display value of the instrument, generally take the loadcell capacity. Range: minimum division * 1000000 . When out of range, prompt (" data out of range ") information, so as not to damage the loadcell by weighing overpressure.
215 Theory Switch		ON	Turn on the theoretical calibration switch to make the theoretical calibration value effective; Range: OFF; ON . If the parameter is set to ON, only weight-free calibration can be performed. When it is set to OFF, the calibration with weight method can be used.
22 Loadcell Channel			
Used to select the channel number that can be enabled, channels 1 to 4, press ENTER to switch ☒ to select the channel that accesses the loadcell, correctly calculate the weight and display the alarm.			
23 Loadcell Param Set			
231 Quick Set	2311 Loadcell sensitivity	3.0000 mV/V	Loadcell true sensitivity, 4 decimal points, write average sensitivity if multiple loadcells, range: less than 3.9999mV/V .
	2312 Loadcell Range	10000	Loadcell true range, if multiple loadcells, write the sum of all loadcell capacities, range: less than 1000000 .
232~235 CH1to CH4 Set	Loadcell sensitivity	3.0000 mV/V	Set the true sensitivity of each loadcell respectively 4 decimal points, range: less than 3.9999mV/V .
	Loadcell range	10000	Set the true range of each loadcell respectively, range: less than 1000000 .
	Loadcell ZeroOutput	0	This parameter represents the voltage at which the sensor was not connected to the scale body when it left the factory. When calculating the force deviation, use the current sensor voltage minus the zero-point output voltage of the sensor. Use this value to determine the force deviation (the affected functions "tilt alarm threshold", "sensor force threshold", and "debugging force threshold" all use this difference for judgment). Range: -15.0000 -15.0000 mv/5V. (Note: This parameter is expressed in mv/5V. If the sensor manufacturer provides mv/V, manual input of *5 is

			required. If it is mv/10V, input of /2 is needed. Suppose the zero-point output voltage of the sensor provided by the sensor manufacturer is 0.0100mv/V, then the corresponding input value is: 0.0500).
24 Loadcell Signal			Set the signal range of the Loadcell
241 Signal range	0-15mV		Range: 0-5mV; 0-10mV; 0-15mV; -5-5mV; -10-10mV; -15-15mV Instrument adjusts the signal sample range according to the input range to ensure more accurate measuring. Select the negative signal range option, millivolts can display negative numbers, you can calibrate zero and gain in the negative millivolt range.
25 Sample Filter			Set filtering parameters
251 Digital filter	8		Range: 0-9 ; The larger the number, the higher the filtering intensity, but the Instrument response time will be longer.
252 Stab Filter	80		Range 0-99d, 0 : Turn off the steady-state filter. Non-0 : Starts the steady-state filter if the weight change is within the range
253 ADC Sample Speed	100		Range: 50; 100; 200; 400; 800 (Hz).
26 Scale Param Reset	//		Input the correct 6-digit password to restore the factory settings of the calibration operation, scale parameters and basic parameters

Chapter 7 Basic parameters

7.1 Basic parameters content

Parameter Items	Default	Instruction
31 STAB and TrZero		Set the parameters for stabilizing and zeroing
311 STAB Range	1d	Range: 0-99.0 : The stability check function is turned off, and the weight stability marker is always active. Non-0 : In the stability judgment time, if the weight change range is not greater than the set value, the weight is stable
312 STAB Time	1000ms	Range: 1-5000ms . If the range of weight variation does not exceed the stability range during this time, the weight is stable
313 TrZero Range	3d	Range 0-99d. 0 : Turn off zero tracking function. Non-0 : If the weight change is less than the zero range during the zero tracking time, the system automatically tracks the zero position.
314 TrZero Time	1000ms	Range 1-5000ms , in the zero tracking time, the weight change is less than the zero tracking range, then the system will automatically track the zero position
32 Zero Operation		Set the zero parameters
321 PWR-On Zero Range	0%	Range: 0~100(* capacity %) ; 0 : disable the automatic zero function on power-on. 0-100 : indicates that the zero from 0 ~ 100% of the maximum capacity.
322 Clear Zero Range	2%	Range: 1 ~ 99(* capacity %) . Set the range of allowing to zero
323 Remote Zero Switch	ON	Set to ON to zero through the communication port; If set to OFF , cannot zero through the port.
33 Creep Track		
331 Creep Time	200s	Range: 0-999s . 0s does not track creep
332 Creep Range	3.0 d	Range: 0-99.9d . 0d does not track creep
34 Scale Unbalanced Alarm		
341 Scale Alarm Switch	ON	Range: ON/OFF ; Set to OFF, the following alarm information does not take effect
342 Alarm Duration	10s	Range: 0-1000s , the alarm time when the following alarm information is triggered
343 Tilt Alarm TH	8.0%	Range: 0-100.0% , the difference in loadcell force is greater than the tilt alarm threshold to trigger the alarm
344 Loadcell Force TH	4.0%	Range: 0-100.0% , when the force of a single loadcell is greater than (capacity * threshold percentage), the alarm is triggered. The range comes from the calibration range of the theoretical value.
345 Debug Force TH	0.3%	Range: 0-100.0% An alarm will be triggered when the force on the sensor tested during installation and commissioning exceeds the threshold.
346 Range Alarm TH	90%	Range: 0-100.0% , trigger alarm when weight >(total capacity * threshold percentage)
347 CH weight TH	500	Range: 0-999999 , the weight of a single channel will alarm when it changes beyond the threshold within the

		set time range
348 CH weight Time	5s	Range: 0-10s
349 All Weight TH	800	Range: 0-999999 , the total weight will alarm when it changes beyond the threshold within the set time range
3410 All Weight Time	5s	Range: 0-10s
35 Basic Reset	//	Enter the correct 6-digit password to restore the factory Settings of the loadcell signal and filtering and sampling in the basic parameters and calibration menu

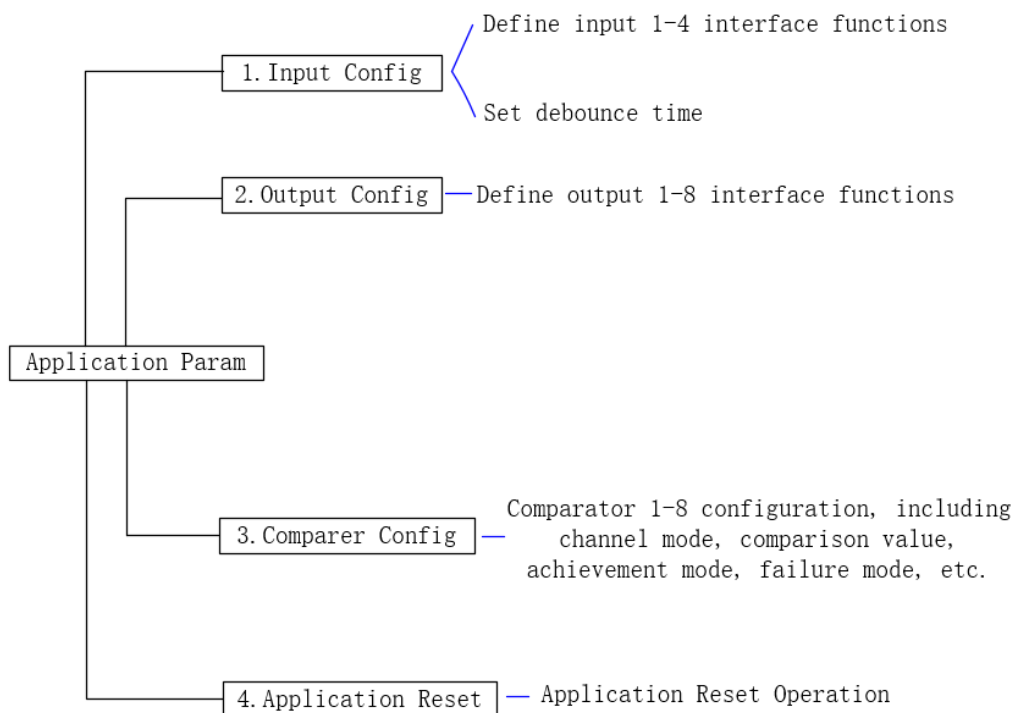
7.2 Zero operation

Successful conditions for Zeroing: the weighing platform is stable; **2)** the weight is within the zero range.

To achieve zero operation:

1) Zero by press Key; **2)** the input port which defined as zero is valid; **3)** zero by communication port (remote zero switch is set to ON))

Chapter 8 Application parameters



8.1 Input port configuration

Input port configuration parameters in the instrument's application parameter item. The instrument is equipped with **4** input interfaces and **6** output interfaces, which can meet the **IO** function of **4** in and **6** out.

Input port **1~4** application function and debounce time can be set separately, the initial default has no function, customers can define by themselves.

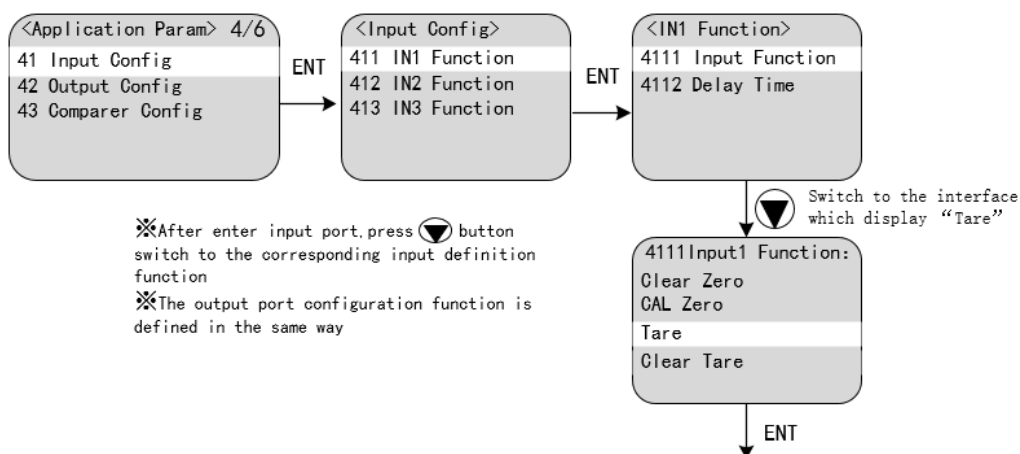
Parameter Items	Parameter content	Instructions
41 Input Config	IN1 ~4 Function	Optional functions: no function, zero, zero calibration, tare, clear tare, switch gross/net weight, enable comparison point, print, feed paper; ※ Defined as no function will let the corresponding input port has no function.
	IN1 ~4 Delay Time	Avoid misjudgment caused by signal debounce. Initial value: 5ms ; Range : 0-1000ms

Input port function description:

Application function	Meaning
None	No input
Clear Zero	When the signal input is valid, the instrument performs zero operation.
CAL Zero	When the signal input is valid, the instrument performs zero calibration.

Tare	When the signal input is valid, the taring function is performed.
Clear Tare	When the signal input is effective, the tare function is performed, the removed tare weight is restored.
GROSS/NET	When the signal input is valid, the gross/net weight is switched.
Enable Comparison	If defined the function, whether the comparison point output is controlled by the status of the I/O port. If the comparison condition is true, and the input is valid, the comparator output will be valid, otherwise no output. If the function is not defined, the comparison condition is valid and there is an output, which is not controlled by the input.
Print	When this signal input is valid, the print function is performed.
Print Empty Line	In the non-print state, when the signal input is valid, the feed paper function is performed.

Example: Define input 1 as taring



8.2 Configuring Output Ports

The output port configuration parameter is applied in the instrument parameter item. The function of output port 1-6 can be set. The initial default has no function. The customer can define it by himself.

Parameter Items	Parameter content	Instructions
42 Output Config	OUT1~6 Function	Optional functions: NONE, Comparer 1-8 , Stab, Zero, Net Weight, Negative Weight, COM Heartbeat, Print ※ Defined as no function means that the output port has no function.

Output function description

Application Function	Meaning
NONE	No output
Comparer 1-8	When the condition of comparator 1-8 is met, there is output; If the input port is set as the enable comparison point, the input is valid, and the comparator has an output.
Stab	Effective when the instrument stability marker has an output.
Zero	Instrument zero indicator is valid when there is an output.

Net Weight	The output is valid when the instrument is at net weight.
Negative Weight	Output is valid when the displayed weight is less than 0 .
Print	Effective when the instrument outputs during the printing process.

8.3 Comparator configuration

In the comparator configuration parameters, you can set the comparison channel, comparison mode, comparison condition, achieve mode, and failure mode of the comparator 1 to 8.

GMT-H4 has 8 comparator functions, respectively 431-438 parameter items, each comparator parameter settings in the following sheet, taking comparator 1 as an example.

Parameter content	Instructions
43 Comparer Config	Set the comparator parameters
431 Comparer1 Function	
4311 Comparer Mode	Weight Judgment: OFF, Weight <= CV1, Weight = CV1, Weight != CV1, Weight >= CV1, Weight<=CV1 ※ If the current weight status is net weight, the weight is net weight; If it is gross weight, then this weight is gross weight
4312 Comparer Value 1	The higher priority comparison value, which is adopted by default when there is only one comparison parameter. Initial value: 0 ; Range: -999999-999999 . (Press the up and down arrow to switch positive and negative signs)
4313 Comparer Values 2	When using two comparison values, the value must be greater than the first comparison value. Initial value: 0 ; Range: -999999-999999 . (Press the up and down arrow to switch positive and negative sign)
4314 Achieve Mode	When the comparison is successful, the instrument outputs effective additional restrictions. Initial value: output immediately; Optional: 1. Immediate Output (as long as the comparison conditions are established, immediately output); 2.Weight Stable Output (output only when the comparison condition is established and the current weight is stable); 3.Delay Output (output after the success time exceeds the achieve judge time).
4315 Achieve Judge Time	Minimum judge time for success. Initial value: 1000ms ; Range: 0 to 50000ms .
4316 False mode	Additional restriction condition that the instrument is invalid after the comparison changes from success to failure; Initial value: immediately invalid; Optional: Immediate Invalid, Weight Stable Invalid, Delay mode (invalid when failure time over failure judge time
4317 False Judge Time	Minimum judge time for failure. Initial value: 1000ms ; Range: 0 to 50000ms .

8.4 Application Examples

Example 1: Output 1 is valid when the weight is greater than or equal to 500g and stable.
Output 1 is invalid when the condition is not met and stable.

Setup: 1) output port **OUT1**, set to: comparator **1**.

- 2) Compare mode is set to: **Weight $\geq$ CV1**
- 3) Comparison value **1** is set to: **500**.
- 4) Comparison value **2** is set to: **0** (single point comparison, this parameter is meaningless).
- 5) Achieve mode is set to: **Weight Stable Output**
- 6) Achieve Judge time is: **0** (non-delay mode, this parameter is meaningless).
- 7) Failure mode is set to: **Weight Stable Invalid**,
- 8) Failure Judge time is: **0** (non-delay mode, this parameter is meaningless)

※ If the weight is greater than or equal to **500g**, the steady state has been invalid, the output **1** will not be switched to the valid state.

Example 2: If the weight is not between 200g and 500g, the output 4 is valid after 5ms delay. If the condition is not met, the output 4 is invalid after 5ms delay.

Setting: **1)** output port OUT4 is set to: comparator **1**.

- 2) Compare mode is set to: **CV1 $\geq$ Weight $\leq$ CV2**.
- 3) Comparison value **1** is set to: **200**.
- 4) Comparison value **2** is set to: **500** (this value should be greater than compare value **1**).
- 5) Achieve mode is set to: Delay Output.
- 6) Achieve Judge time: **5ms**.
- 7) Failure mode is set to: Delay Output.
- 8) Failure Judge time: **5ms**.

Example 3: If the input is set to enable comparison point function, the weight is between 200g and 300g, the immediate output is effective. If the conditions are not met, the immediate output is invalid.

Settings:

- 1) Input port IN1 is set to: Enable comparison point.
- 2) Output port OUT4 is set to: comparator **1**.
- 3) Compare mode is set to: **CV1 $\leq$ Weight $\leq$ CV2**.
- 4) Comparison value **1** is set to: **200**.
- 5) Compare value **2** is set to: **300** (this value should be greater than compare value **1**).
- 6) Achiece mode is set to: **Immediate Output**.
- 7) Achieve judge time is: **0ms** (in non-delay mode, this parameter is meaningless).
- 8) Failure mode is set to: **Immediate Invalid**.
- 9) Failure judge time: **0ms** (in non-delay mode, this parameter is meaningless).

If the weight is between **200~300g**, although the comparison condition is met, the comparator will output immediately when the comparison point input is valid; If the conditions are not met, the output will be immediately invalid.

Chapter 9 Communication parameters

GMT-H4 has rich communication interface: serial port 1 RS485, serial port 2 RS232, common network port (supporting TCP-IP communication protocol) and bus interface protocol (Profinet, Ethernet/IP, CClink IE).

9.1 Communication Parameters

Parameter		Initial value	Instructions
51 RS-485, 52RS-232 parameters			
Port	01	Range: 01-99	
Baudrate	9600	Range: 4800, 9600, 19200, 38400, 57600, 115200	
Protocol	Modbus RTU	Range: Modbus RTU, GM-Cont, PRINT, Modbus Custom	
Data Format	8-N-1	Range: 8-N-1, 8-E-1, 8-O-1, 7-E-1, 7-O-1 Note: Modbus only supports 8-bit data bits.	
Dword Format	AB-CD	Range: AB-CD (high byte in front), CD-AB (low byte in front)	
Send Gap	20ms	The time interval between frames under the continuous send protocol. Range 0-5000ms, default: 20ms	
53 TCP/IP parameters			
531 IP Config		192.168.000.101	Range: 000.000.000.000-255.255.255.255
532 Subnet mask		255.255.255.000	Range: 000.000.000.000-255.255.255.255
533 Gateway		192.168.000.001	Range: 000.000.000.000-255.255.255.255
534 Connect 1	Port	502	Range: 0-65535, network communication port number Settings, 0 indicates that the connection is closed
	Communication protocol	Modbus/TCP	The value can be set for standard network ports. The value can be: modbus-RTU, GM-Cont, or Modbus Customize
	Dword Format	AB CD	Range: AB CD, CD AB; Can be set for standard network ports, high-low byte mode, used when the protocol is Modbus/TCP.
	Send Gap	20ms	When the communication protocol is GM-Cont, this parameter is used to set the interval between consecutive transmissions. Range :0-5000ms
535 ~ 539 Connect2~Connect 6		The default port number is 0, and the rest of the parameters refer to the communication parameters of Connection 1	
54Profinet parameter			
541 IP Config		192.168.000.101	The value ranges from 0.0.0.0 to 255.255.255.255
542 Port		502	Range: 0-65535, communication port, 0 means close this connection
543 Write switch		OFF	Range: Off, on; ON: PN/EIP/CCLink IEF Basic communication, instrument parameters by the master station configuration of the "module parameters" control, the master station when the instrument is powered on the "module parameters" set parameters into the

		instrument automatically. OFF: When PN/EIP/CCLink IEF Basic communication, the instrument parameters are not controlled by the master station "module parameters".
544 Data type	Int	PLC display type selection switch. Range: Int, float
545 Bus TCP Protocol	Modbus-TCP	Range: Modbus-TCP, Modbus Customize, MQTT
546 Dword Format	AB CD	Range: AB CD, CD AB ; Bus TCP protocol Select Modbus-TCP or Modbus Custom to see this parameter.
55 EIP/IP parameter		
551 IP Config	192.168.000.101	The value ranges from 0.0.0.0 to 255.255.255.255
552 Port	502	Range: 0-65535 , communication port, 0 means close this connection
553 Subnet Mask	255.255.255.000	Range: 000.000.000.000-255.255.255.255
554 Gateway	192.168.000.001	Range: 000.000.000.000-255.255.255.255
555 Write Switch	OFF	Range: Off, On; ON:PN/EIP/CCLink IEF Basic communication, instrument parameters by the master station configuration of the "module parameters" control, the master station when the instrument is powered on the "module parameters" set parameters into the instrument automatically. OFF:When PN/EIP/CCLink IEF Basic communication, the instrument parameters are not controlled by the master station "module parameters".
556 Data Type	Int	PLC display type selector switch. Range: Int float.
557 Bus TCP Protocol	Modbus-TCP	Range: Modbus-TCP, Modbus Customize, MQTT
548 Dword Format	AB CD	Range: AB CD, CD AB ; Bus TCP This parameter is displayed if modbus-TCP or Modbus Custom is selected.
56 CCLINK-IE parameter (same as EIP parameter)		
58GPRS Communication		
581 Target IP	192.168.000.101	The value ranges from 0.0.0.0 to 255.255.255.255
582 Target port	502	Range: 0-65535, the communication port, where 0 indicates that the connection is closed
583 Heart Rate	30s	Range: 0-3600s, the interval for sending MQTT data packets
584 Communication switch	OFF	Range: OFF, ON; Default: OFF, whether to turn on GPRS communication

585 Activate GPRS	//	Restart GPRS.
586GPRS Status	//	Displays the current GPRS status
587 IMEI	//	Device Identification number
588 IMSI	//	SIM card unique identifier
59 MQTT Communication Param	MQTT is divided into wired MQTT and wireless MQTT 1) Wired MQTT needs to be selected: PN, EIP, CCLink bus communication, in the corresponding bus menu, through the [Bus TCP protocol] select MQTT, select the menu of MQTT, need to connect the network wire 2) Wireless MQTT(GPRS) communication: need to be used with GPRS module; when selected with GPRS module, communication parameters will occur MQTT parameter menu	
591 Server Port	502	Range: 0-65535, network communication port number Settings, 0 indicates that the connection is closed
592 Server IP	192.168.000.101	The value ranges from 0.0.0.0 to 255.255.255.255
593 Upgrade port	5555	Range: 0 to 65535
594 Upgrade IP	119.136.032.070	Range: 0.0.0.0 to 255.255.255.255
595 Clear Param Switch	OFF	Range: OFF/ON
596 Client IP	/	Once the platform is connected, can view it
597 Client User	/	
598 Client Password	/	
599 Subscribe Theme	/	
5910 Publish Theme	/	
510Modbus Customize (50 groups of addresses can be set)		
5101 Set Customize Addr	0	Want to define which address location in the new address, range: 0-65535 (7000-8600, 9000-10201 unavailable)
5102 Set Map Addr	0	Select function address, range: 0-65535 (7000-8600, 9000-10201 unavailable)
5103 Set Map Length	0	The length of the address, range: 1-65535, (after setting the mapping length, the whole set of data will take effect)
5104 Cleart Map group	0	empty which group. The group numbers will be reordered based on the source address after clearing
5105 View Map Addr	0	can view 50 groups of custom addresses, mapped addresses, and mapped lengths, respectively
511 Print Param (communication protocol set to PRINTvisible)		
5111 Head Info. Rows	1	set how much header line to use, range 0-4
5112 End Info. Rows	1	set how many tailer line to use, ranging 0-4
5113 Print Interval	2	Number of lines spaced between each print, range 0-99
5114 Print Content	Display weight	Optional: Displayed Weight, Gross weight, Net weight, Net weight + tare (two lines), All Info (Gross weight + Net weight + Tare) (print includes units)

5115 Print Language	Chinese	Choose Chinese and English
5116 Head info1 ~ 5119 Head info4	-----	Header information line, 16 English characters can be edited
51110 End Info 1 ~ 51113 End Info 4	-----	Tail information line, 16 English characters can be edited
512 Communication Reset		
This parameter is used to restore the communication parameter to the factory setting. When resetting the communication parameter, you need to enter the calibration/reset password. The default value is 000000 . You can change the password through the parameter "System parameters" -- "Password Management" -- "Change Password"		

9.2 Example for printing format

Examples of print format applications:

Parameter setting		Print contents (English)
HeaderLine	2	-----
EnderLine	1	----- TEST -----
Ticket Gap	3	No. Xxxxxxxx1
Content	Display weight	Display weight
Print Lang	English	NT -X.XXXX kg
HeaderLine1	-----	----- END1 -----
HeaderLine 2	----- TEST -----	
EnderLine 1	----- END1 -----	
		----- (Print 2rd)

9.3 Built-in Web pages

Step1: Set COM Param---53TCP/IP parameter 531 IP config, the default communication protocol is **modbus/TCP**, such as: **192.168.101.10** (Note: this IP address needs to be in the same network segment as the IP address of the accessing computer).

Step2: Enter the IP address 192.168.101.10 in the computer browser, then can log in to the system.

Step3: You can set the parameters of the instrument in the web page, submit the synchronization to the instrument.

The interface is as follows:



Chapter 10 System Parameters

Parameter Item		Instruction
61 Language		Initial value: Chinese, English optional.
62 System Info		
621 Software Version	View the software version and compile date. You can also view it through the shortcut key and long press ENTER on the home screen.	
622Product Key	View the serial number and 138 code of the instrument for easy identification of the instrument factory code	
623 MAC address	View the MAC address of the instrument.	
63 I/O Test		
631 IN Test	Perform a hardware test on the IO port, see 10.1 I/O Test for details.	
632 OUT Test		
64 Communication Test		
641 Send Test	Serial port test function to detect the status of serial port connection. For details, see 10.2 Communication Test .	
642 Receive Test		
65 Screen Set		
651 Screen Sleep	Set screen off time, initial value: 600s, range: 0~3600s. If the value is set to 0, the screen display will not be turned off.	
652 Screen Test	If the screen and indicator are all on and the screen saver time is not off, the screen is normal.	
653 Screen Loop	Set the parameters of the cycle in the main interface, optional loadcell weight, loadcell voltage, loadcell pressure, loadcell internal code, press ENTER to switch the selection.	
66 Logo Set	Change the startup Logo, which can contain only 8 digits, letters, Spaces, and hyphens (-). The change is password protected.	
67 Password Manage		
671Password Switch	Parameter password switch. ON and OFF are optional. When the parameter is set to ON, you need to enter the password when modifying the parameter.	
672Change Password	6721 Change CAL Password	Modify the password when calibration, need to enter 6 digits of the original password
	6722 Change Other Password	For the password used to set other parameters, you will also need to enter a 6-digit old password and a new password.
68 Remote Editing switch		
681 CAL Remote Switch	Whether to enable remote editing of calibration parameters, set to ON, can remotely operate the corresponding calibration parameters through communication.	
682 Other Remote Switch	Except the calibration parameter whether other parameters need to be enabled remote editing SW, set to ON, can remotely operate the corresponding parameters through communication.	
69 System Time Set	Set the display time of the system.	
610 Reset Factory		
This parameter is used to restore system parameters to their factory defaults. You need to enter a reset password to reset system parameters. The default value is 000000 . You can change the password through the parameter "Password Manage" -- "Change Password" -- "		

Change Other Password "

10.1 I/O Test

The I/O test function is used to test whether the input/output connection status is normal.

Input test:

631 IN Test			
I1: ×	I2: ×	I3: ×	I4: ×

Step: Connect the external device to the input IO interface of the instrument, enter the input test interface, the external input is valid, and the interface of the corresponding IO input port connected at this time is changed from × to ✓, indicating that the input interface is normally connected to the external device. Other ports are also tested in the same way.

Output test:

632 OUT Test			
O1: ×	O2: ×	O3: ×	O4: ×
O5: ×	O6: ×		

Step: Connect the external device with the output interface of the instrument, ENTER the output test interface, press ENTER key at this time, the IO output interface is changed from × to ✓, the external state can be switched with the Enter key for conversion, then the output connection is normal.

10.2 Communication Test

The function of serial port test is to send and receive data at a fixed Baud rate (**9600**) and data format (**8-N-1**) to test the status of serial port connection.

10.2.1 Receive test

Externally send test data (only in ASCII code) to the instrument and display the data on the display, with no more than 10 bytes of data per frame.

If the external send 30 31 41 to the instrument, and the instrument displays the following figure, it means that the COM-485 connection is normal, and the COM-232 serial port line is tested in the same way.

642 Receive test
COM1: 0 1 A
COM2:

10.2.2 Send test

Send the data "**COMx Test nnn**". **X=1 if COM-485, X=2 if COM-232.**

Chapter 11 Communication Protocols and Addresses

11.1 Modbus Protocol

11.1.1 Function Code and Exception Code Description

Function codes supported by the instrument

Function code	Name	Instructions
03	Read register	Read up to 125 registers at a time
06	Write a single register	
16	Write multiple registers	This instrument command only supports writing double registers, the address must be aligned when writing, only a part of the double register is not allowed to be written, and a part of the read is allowed when reading.
01	Read Coil	Note that this length is in bits.
05	Write Coil	

Note: This instrument only supports the above **MODBUS** function codes, the instrument will not respond when sending other function codes to the instrument.

Exception Code response

Code	Name	Meaning
02	Illegal data address	For this instrument, this error code indicates that the received data address is a disallowed address.
03	Illegal data value	The data written does not fit within the allowed range.
04	Slave machine failure	An unrecoverable error occurs when the instrument is attempting to perform the requested operation.
07	An unsuccessful programming request	For the instrument, the command received cannot be executed under the current conditions.

11.1.2 Transmission mode

RTU mode

(1) When communicating in **RTU** mode, every **8** bits (**1** byte) in the message is divided into two **4-bit hexadecimal** characters.

(2) Indicates an interval of more than 3.5 characters at the end of a frame. For a more reliable end, it is recommended to use an interval of more than 4.0 characters.

The specific protocol is as follows:

Supported data formats: 8-bit data bit, 1-bit stop bit, parity check (**8-E-1**)

8-bit data bit, 1-Stop Bit, Odd check (**8-O-1**)

8-bit data bit, 1-Stop Bit, no check (**8-N-1**)

Code: Binary

11.1.3 Modbus Communication Address Table

PLC address	Display address	Data type	Meaning	Instructions
Weight Status Information Parameters (Read only)				
40001-40002	0000-0001	Int	Combined mode displayed weight value (4-byte signed integer)	

40003-40004	0002-0003	Int	Channel 1 Currently displaying weight value (4 bytes of signed integer)		
40005-40006	0004-0005	Int	Channel 2 Currently displaying weight value (4 bytes signed integer number)		
40007-40008	0006-0007	Int	Channel 3 Currently displaying weight value (4 bytes signed integer number)		
40009-40010	0008-0009	Int	Channel 4 Current display weight value (4 bytes signed integer number)		
40011	0010	Uint	Combination Mode Weight status flag bit	Bit	Instructions
				D15	The current weight is calibration without weight
				D14	Communication status light
				D13	Currently displayed net weight
				D12	Combined force weight jumps
				D11	Weight offset
				D10	Abnormal force on the loadcell (loadcell weight jump, uneven force, loadcell overrange, configuration or parameter setting errors)
				D9	Combined force loadcell negative overflow, lower than the allowable range of loadcell voltage
				D8	Positive overflow of combined force loadcell, beyond the allowable range of loadcell voltage
				D7	Weight negative overflow, weight less than "-(Max range +9d)"
				D6	Weight positive overflow, weight greater than "Max range +9d"
				D5	Overflow status (abnormal weight or loadcell)
				D4	Abnormal loadcell wiring (display alarm when abnormal loadcell wiring)
				D3	Displayed weight negative sign (Displayed weight is negative)
				D2	Zero (weight in the range of 0+/- quarter d)
				D1	Millivolts are not stable, (the marker of millivolts stability when calibrated)
				D0	Unstable weight
40012	0011	Uint	Channel 1 Weight status marker bit	D15	Channel open (When the channel is closed, the status bits of the channel are all 0)
				D13~14	Reserved
				D12	Incorrect loadcell configuration or parameter setting
				D11	Loadcell weight jumps

※ Indicates the weight status of the instrument. When it is the current status, the status bit displays "1".

				D10	Scale platform offset load
				D9	The loadcell force is uneven and the deviation is too large
				D8	The loadcell is out of range
				D7	Negative loadcell overflow, below the allowable range of loadcell voltage
				D6	A positive loadcell overflow is beyond the allowable range of the loadcell voltage
				D5	Signal cables are incorrectly connected or improperly connected
				D4	The loadcell excitation source may be short-circuited
				D3	The loadcell is not connected or the excitation source is improperly connected
				D2	ADC failure
				D1	Weight is shown as a negative number
				D0	The loadcell voltage is unstable
40013	0012	Uint	Channel 2 Weight status flag bit	Refer to the weight status marker for channel 1.	
40014	0013	Uint	Channel 3 Weight Status flag bit	Refer to the weight status marker in channel 1 for details.	
40015	0014	Uint	Channel 4 Weight Status flag bit	Refer to the weight status marker in channel 1 for details.	
40016	0015	Reserved			
40017-40018	0016-0017	Float	Combined mode the displayed weight values		
40019-40020	0018-0019	Float	Channel 1 the displayed weight value		
40021-40022	0020-0021	Float	Channel 2 the displayed weight value		
40023-40024	0022-0023	Float	Channel 3 the displayed weight value		
40025-40026	0024-0025	Float	Channel 4 the displayed weight value		
40027-40028	0026-0027	Int	Combined mode the gross weight value (4 bytes signed number)		
40029-40030	0028-0029	Int	Combined mode the net weight value (4 bytes signed number)		
40031-40032	0030-0031	Int	Combined mode the tare value (4 bytes signed number)		
40033-40034	0032-0033	Float	Combined mode the gross weight value (4 bytes signed number)		
40035-40036	0034-0035	Float	Combined mode the net weight value (4 bytes signed number)		
40037-40038	0036-0037	Float	Combined mode tare value (4 bytes signed number)		
40039-40040	0038-0039	Int	Channel 1 pressure value, signed		
40041-40042	0040-0041	Int	Channel 2 pressure value, signed		
40043-40044	0042-0043	Int	Channel 3 pressure value, signed		
40045-40046	0044-0045	Int	Channel 4 pressure value, signed		
40047-40048	0046-0047	Int/Uint	Combined mode filtered ADC internal code, bipolar - signed number; Unipolar - unsigned number		
40049-40050	0048-0049	Int	Combined mode loadcell voltage value		
40051-40052	0050-0051	Int	Combined mode relative zero voltage value		
40053-40054	0052-0053	Int/Uint	Channel 1 filtered ADC internal code, bipolar - signed number; Unipolar - unsigned number		
40055-40056	0054-0055	Int	Channel 1 loadcell voltage value, signed number,4 decimal points		
40057-40058	0056-0057	Int	Channel 1 relative zero voltage value, signed number,4 decimal points		
40059-40060	0058-0059	Int/Uint	Channel 2 filtered ADC internal code, bipolar - signed number; Unipolar - unsigned number		
40061-40062	0060-0061	Int	Channel 2 loadcell voltage value, signed number,4 decimal points		
40063-40064	0062-0063	Int	Channel 2 relative zero voltage value, signed number,4 decimal points		

40065-40066	0064-0065	Int/Uint	Channel 3 filtered ADC internal code, bipolar - signed number; Unipolar - unsigned number		
40067-40068	0066-0067	Int	Channel 3 loadcell voltage value, signed number,4 decimal points		
40069-40070	0068-0069	Int	Channel 3 relative zero voltage value, signed number,4 decimal points		
40071-40072	0070-0071	Int/Uint	Channel 4 filtered ADC internal code, bipolar - signed number; Unipolar - unsigned number		
40073-40074	0072-0073	Int	Channel 4 loadcell voltage value, signed number,4 decimal points		
40075-40076	0074-0075	Int	Channel 4 relative zero voltage value, signed number,4 decimal points		
40077-40126	0076-0125	Reserved			
40127	0126	Uint	Input status area	Bit	Instructions
				D8-15	Reserved
				D7	Optional Input 4 status
				D6	Optional input 3 status
				D5	Optional input 2 status
				D4	Optional Input 1 status
				D3	Input 4 status
				D2	Input 3 status
				D1	Input 2 status
D0	Input 1 state				
40128	0127	Reserved			
40129	0128	Uint	Output status area	Bit	Instructions
				D12-15	Reserved
				D11	Optional output 6 status
				D10	Optional output 5 status
				D9	Optional output 4 status
				D8	Optional output 3 status
				D7	Optional output 2 status
				D6	Optional output 1 status
				D5	Output 6 status
				D4	Output 5 status
				D3	Output 4 status
				D2	Output 3 status
				D1	Output 2 status
				D0	Output 1 status
40130	0129	Reserved			
40131	0130	Uint	Process status flag bit	D10-15	Reserved
				D9	IO Test status
				D8	reserve
				D7	Comparator 8 achieved (comparison condition is valid)
				D6	Comparator 7 achieved (comparison condition is valid)
				D5	Comparator 6 achieved (comparison condition is valid)
				D4	Comparator 5 achieved (comparison condition is valid)
				D3	Comparator 4 achieved (comparison condition is valid)
				D2	Comparator 3 achieved (comparison condition is valid)
				D1	Comparator 2 achieved (comparison condition is valid)

				D0	Comparator 1 achieved (comparison condition is valid)
40132 ~ 40140	0131 ~ 0139	Reserved			
40141	0140	Uint	Error code 1	D14 -15	Reserved
				D13	Unstable at calibration, waiting to stabilize
				D12	When remote calibration is prohibited, perform remote calibration.
				D11	Reserve
				D10	The previous weight point is not calibrated
				D9	Out of minimum resolution
				D8	Weight input exceeds maximum range
				D7	The weight input cannot be zero
				D6	Weight calibration is less than zero or the previous calibration point
				D5	The loadcell overflow positive ly during weight calibration
				D4	The loadcell overflow negatively during weight calibration
				D3	Weight calibration is unstable
				D2	Loadcell overflow positively during zero calibration
				D1	Loadcell overflow negatively during zero calibration
				D0	Zero calibration is unstable
40142	0141	Uint	Error Code 2	D15	It is 1 when calibration fails
				D14	Unstable at calibration, waiting to stabilize
				D13	Angle difference calculation error
				D12	Net weight status does not allow for taring
				D11	The weight is negative when the tare is removed
				D10	Loadcell overflow positively when taring
				D9	Loadcell overflow negatively when taring
				D8	Unstable when taring
				D7	The net weight status does not allow for zeroing
				D6	The remote zero switch is not enabled during remote zero
				D5	Loadcell is overflow positively when zeroing
				D4	Loadcell overflow negatively when zeroing
				D3	Unstable when zeroing
				D2	Zero out of range
				D1	The power-on zero is unstable
D0	The power-on zero is out of range				
40144 ~ 40200	0143 ~ 0199	Reserved			
Basic parameter area, readable and writeable					
40201-40202	0200-0201	Uint	PWR-ON Zero Range	Initial value: 0 (OFF), 0: The automatic zero function is disabled on power-on 1-100: Indicates that the device is powered on in the range of 1-100%	
40203-40204	0202-0203	Uint	Zero Range	1%-99% of the maximum range, initial value: 2%	

40205-40206	0204-0205	Uint	Remote Zero Switch	Range: 0 (OFF), 1 (ON); Initial value: 1 (ON)	
40207-40208	0206-0207	Uint	STAB Range	Range: 0-99d , initial value: 1	
40209-40210	0208-0209	Uint	STAB time	Range: 1-5000 milliseconds, initial value: 1000	
40211-40212	0210-0211	Uint	TrZzero Range	Range: 0-99d , initial value: 3	
40213-40214	0212-0213	Uint	TrZero Time	Range: 1-5000 milliseconds, initial value: 1000	
40215-40216	0214-0215	Uint	Digital Filter	Range: 0-9 , initial value: 8	
40217-40218	0216-0217	Uint	STAB Filter	Range: 0-99d , initial value: 80	
40219-40220	0218-0219	Uint	AD Sample Speed	Range: 0-4 (corresponds to 0-50; 1-100; 2-200; 3-400; 4-800) Initial value: 1-100	
40221-40222	0220-0221	Uint	Signal range	Range: 0-5 (corresponding to 0:0-5mV; 1:0-10mV; 2:0-15mV, 3:-5-5mV; 4:-10-10mV; 5:-15-15mV) Initial value: 2 (0-15mV)	
40223-40224	0222-0223	Uint	Creep Time	Range: 0-999s , initial value: 0s	
40225-40226	0224-0225	Uint	Creep Range	Range: 1-999 , initial value: 30	
40227-40700	0226-0699	Reserved			
Calibration parameter area, readable and writable					
40701-40702	0700-0701	Uint	Unit	Range: 0-3; 0-t, 1-kg, 2-g, 3-lb ; Initial value: 1	
40703-40704	0702-0703	Uint	Decimal Point	Range: 0-4; 0-0, 1-0.0, 2-0.00, 3-0.000, 4-0.0000 ; Initial value: 0	
40705-40706	0704-0705	Uint	Division	Range: 1,2,5,10,20,50	
40707-40708	0706-0707	Uint	Full Scale	Range: 1 - index value *200000, initial value: 999999	
40709-40710	0708-0709	Uint	Auto Zero CAL	Write 1 only; Write 1 to zero calibrate the current state. Read: Current millivolts of the loadcell. Fixed: 4 decimal points.	
40711-40712	0710-0711	Uint	One Click Manual Input	Range: 0-150000 ; Write millivolts; Read as the current zero voltage	
40713-40714	0712-0713	Uint	Channel 1 Manual zero calibration	Data range: 0-150,000, high and low words need to be written at the same time. Write data as zero Point voltage value. Write integer, but the system considers the data to have 4 decimal point. Gets the current zero voltage when reading	
40715-40716	0714-0715	Uint	Channel 2 Manual zero calibration		
40717-40718	0716-0717	Uint	Channel 3 Manual zero calibration		
40719-40720	0718-0719	Uint	Channel 4 Manual zero calibration		
40721-40722	0720-0721	Uint	CAL Point 1	Write weight value to calibrate the weight calibration point 1	Read as the relative millivolts of the calibration point.
40723-40730	0722-0729	Reserved			
40731-40732	0730-0731	Uint	Channel 1 loadcell sensitivity	Write using the actual sensitivity of the loadcell for theoretical value calibration, range: 0.0000-3.9999 , default: 3.0000	
40733-40734	0732-0733	Uint	Channel 1 Total loadcell range	Write the total loadcell range for theoretical value calibration, range: 0-999999 , default: 10000	
40735-40736	0734-0735	Uint	Channel 2	Write using the actual sensitivity of the	

			loadcell sensitivity	loadcell for theoretical value calibration, range: 0.0000-3.9999 , default: 3.0000
40737-40738	0736-0737	Uint	Channel 2 Total loadcell range	Write the total loadcell range for theoretical value calibration, range: 0-999999 , default: 10000
40739-40740	0738-0739	Uint	Channel 3 loadcell sensitivity	Write using the actual sensitivity of the loadcell for theoretical value calibration, range: 0.0000-3.9999 , default: 3.0000
40741-40742	0740-0741	Uint	Channel 3 Total loadcell range	Write the total loadcell range for theoretical value calibration, range: 0-999999 , default: 10000
40743-40744	0742-0743	Uint	Channel 4 loadcell sensitivity	Write using the actual sensitivity of the loadcell for theoretical value calibration, range: 0.0000-3.9999 , default: 3.0000
40745-40746	0744-0745	Uint	Channel 4 Total loadcell range	Write the total loadcell range for theoretical value calibration, range: 0-999999 , default: 10000
40747-40748	0746-0747	Uint	One-click Set loadcell sensitivity	Write the used actual sensitivity of the loadcell for theoretical value calibration, write all channel data at one time, range: 0.0000-3.9999. Unsigned number, integer, four decimal points. (Writable only)
40749-40750	0748-0749	Uint	One-click Set the total loadcell capacity	Write loadcell range for theoretical value calibration, write all channel data at one time, range: 0-999999, unsigned integer. (Writable only)
40751-40752	0750-0751	Uint	Theoretical value effective switch	Write 1 to enable theoretical value calibration, write 0 to use calibration data; If theoretical calibration is currently being used, read as 1. Default: 1
40753-40754	0752-0753	Uint	Zero Return	Input the true weight value Range: 0- Maximum range, high and low byte need to be written at the same time. (Writable only)
40755-40756	0754-0755	Uint	Weight correction factor	Write coefficient to correct the calibration, write data integer, the system default write data with 5 decimal points. Range: 0.00001-9.99999, default: 1.00000.
40757-40758	0756-0757	Uint	Angle difference coefficient 1	Default: 1.00000, readable and writable
40759-40760	0758-0759	Uint	Angle difference coefficient 2	Default: 1.00000, readable and writable
40761-40762	0760-0761	Uint	Angle difference coefficient 3	Default: 1.00000, readable and writable
40763-40764	0762-0763	Uint	Angle difference coefficient 4	Default: 1.00000, readable and writable
40765-40766	0764-0765	Uint	Angle difference sampling	Write 1 angle difference sample once, only writable
40767-40768	0766-0767	Uint	Angle difference sampling times	Readable, write 0 Clear the number of angle difference samples, read as the number of combined channels
40769-40770	0768-0769	Uint	Angle difference reset	Write 1, Angle difference coefficient reset to initial value 1.00000, only Writable. (Writable only)
40771-40772	0770-0771	Uint	Material CAL preparation signal	Send preparatory signal before placing weight for correction. (Write only)
40773-40774	0772-0773	Uint	Material CAL	After placing the weight, enter the corresponding weight value range: 0- maximum range, high and low byte need to be written at the same time.
40775-40776	0774-0775	Uint	Material CAL	Write 1 Reset material calibration

			Reset	all data (note: A reset is required when switching channels)
40777-40778	0776-0777	Uint	Weight compensation channel	bit0: Channel 1, bit1: channel 2, bit2: Channel 3, bit3: Channel 4, 1: compensate channel, 0: not compensate channel
40779-40780	778-779	int32	CH1_Zero-point output voltage of the Loadcell	The zero-point output voltage of the sensor (the voltage before installation) mV/5V
40781-40782	780-781	int32	CH2_Zero-point output voltage of the Loadcell	The zero-point output voltage of the sensor (the voltage before installation) mV/5V
40783-40784	782-783	int32	CH3_Zero-point output voltage of the Loadcell	The zero-point output voltage of the sensor (the voltage before installation) mV/5V
40785-40786	784-785	int32	CH4_Zero-point output voltage of the Loadcell	The zero-point output voltage of the sensor (the voltage before installation) mV/5V
40777 ~ 41100	0776 ~ 1099	Reserved		
Loadcell alarm parameter area, readable and writable				
41101-41102	1100-1101	Uint	Alarm switch	Parameter range: 0-1, default 0 (ON)
41103-41104	1102-1103	Uint	Alarm Duration	Parameter range: 0-1000s, default 10s.
41105-41106	1104-1105	Uint	Tilt alarm threshold	Parameter range: 0-100.0%, default 8%
41107-41108	1106-1107	Uint	Loadcell force threshold	Parameter range: 0-100.0%, default 4%
41109-41110	1108-1109	Uint	Debug force threshold	Parameter range: 0-100.0%, default 2%
41111-41112	1110-1111	Uint	Range alarm threshold	Parameter range: 0-100%, default 90%
41113-41114	1112-1113	Uint	Channel weight threshold	The value ranges from 0 to 999999d. The default value is 500
41115-41116	1114-1115	Uint	Channel weight time	Parameter range: 0-10s, default: 5s.
41117-41118	1116-1117	Uint	Combined weight threshold	Parameter range: 0 to 999999d, default 800
41119-41120	1118-1119	Uint	Combined weight time	Parameter range: 0-10s, default 5s.
41120 ~ 41200	1119 ~ 1199	Reserved		
Apply parameter area, readable and writeable				
41201-41202	1200-1201	Uint	Input 1 function	Default: 0; Parameter range: Optional: 0-6, 0-NONE, 1-Clear Zero, 2-CAL Zero, 3-Tare, 4-Clear Tare, 5-Gross/Net, 6-Enable Comparison 7-Print, 8-Print Empty Line.
41203-41204	1202-1203	Uint	Input 1 delay time	Parameter range: 0-1000ms, initial value: 5ms.
41205-41206	1204-1205	Uint	Input 2 function	Refer to Input 1 function instruction
41207-41208	1206-1207	Uint	Input 2 delay time	Refer to Input 1 debounce instruction
41209-41210	1208-1209	Uint	Input 3 function	Refer to Input 1 function instruction
41211-41212	1210-1211	Uint	Input 3 delay time	Refer to Input 1 debounce instruction
41213-41214	1212-1213	Uint	Input 4 function	Refer to Input 1 function instruction
41215-41216	1214-1215	Uint	Input 4 delay time	Refer to Input 1 debounce instruction
41217-41250	1216-1249	Reserved		
41251-41252	1250-1251	Uint	Output 1 function	Default: 0; Parameter ranges correspond to: 0-14, 0: NONE;

				1-8: comparator 1-8; 9: STAB; 10: Zero; 11 Net weight; 12: Negative weight; 13: COM HeartBeat; 14: Print;
41253-41254	1252-1253	Uint	Output 2 function	Refer to Output 1 function
41255-41256	1254-1255	Uint	Output 3 function	
41257-41258	1256-1257	Uint	Output 4 function	
41259-41260	1258-1259	Uint	Output 5 function	
41261-41262	1260-1261	Uint	Output 6 function	
41263-41290	1262-1289	Reserved		
Comparator parameter area, readable and writable				
41291-41292	1290-1291	Uint	Comparator 1- Compare mode	Initial value: 0-OFF; In comparing mode: Parameter range: 0-6, 0- OFF, 1- Weight<=CV1, 2- Weight=CV1, 3- Weight!=CV1, 4- weight Weight<=CV1, 5- CV1<=Weight<=CV2, 6- CV1>=Weight<=CV2.
41293-41294	1292-1293	Int	Comparator1- Compare value 1	Initial value: 0; Comparison value 1, signed number, range -999999-999999.
41295-41296	1294-1295	Int	Comparator 1- Compare value 2	Initial value: 0; Comparison value 2, signed number, range 999999-999999, greater than comparison value 1;
41297-41298	1296-1297	Uint	Comparator 1- Achieve mode	Initial value: 0- Immediately Output; Range: 0-2, corresponding to: 0- Immediately Output, 1- output after Weight Stable Output, 2- Delay Output;
41299-41300	1298-1299	Uint	Comparator 1- Achieve Judge time	Minimum Achieve Judge time , initial value: 1000ms, range: 0-5000ms;
41301-41302	1300-1301	Uint	Comparator 1- False mode	Initial value: 0- Immediate Invalid, range: 0-2, corresponding to: 0- Immediate Invalid, 1- Invalid after weight stable, 2- Delay output;
41303-41304	1302-1303	Uint	Comparator 1- False Judge time	Minimum failure judge time for failure, initial value: 1000ms, range 0-5000ms;
41304-41318	1304-1317	Uint/Int	Comparator 2 parameters	Refer to the Comparator 1 parameter description
41319-41332	1318-1331		Comparator 3 parameters	
41333-41346	1332-1345		Comparator 4 parameters	
41347-41360	1346-1359		Comparator 5 parameters	
41361-41374	1360-1373		Comparator 6 parameters	
41375-41388	1374-1387		Comparator 7 parameters	
41389-41402	1388-1401		Comparator 8 parameter	
41403-41450	1402-1449	Reserved		
I/O test parameters, readable and writeable, otherwise read-only				
42001	2000	Uint	Test mode	Parameter range: 0-1, 0: exit the I/O test mode, 1: enter the serial port IO test mode, after test, it must be closed, the instrument can enter the normal state.
42002	2001	Uint	Input 1 Test	read 0 means input invalid, and read 1 means: input valid. Writing any value is invalid and only works in IO test mode
42003	2002	Uint	Input 2 Test	
42004	2003	Uint	Input 3 Test	
42005	2004	Uint	Input 4 Test	

42006 ~ 42050	2005 ~ 2049	Reserved		
42051	2050	Uint	Output 1 Test	Range: 0-1 , write: 0 : off output, 1 : turn on output (only valid in IO test mode), read as the current IO port status, 0 : off, 1 : on
42052	2051	Uint	Output 2 Test	
42053	2052	Uint	Output 3 Test	
42054	2053	Uint	Output 4 Test	
42055	2054	Uint	Output 5 Test	
42056	2055	Uint	Output 6 Test	
42063 ~ 42100	2062 ~ 2099	Reserved		
Material CAL readable-writeable				
42101 ~ 42102	2100-2101	Uint	Calibration point selection	Range: 0-10, means the linearity of paragraphs 1 to 10, 0 means no display
42103 ~ 42104	2102-2103	Uint	Channel 1- Gain millivolts	Display the number of gain millivolts corresponding to the "calibration point selection", relative to the previous calibration point
42105 ~ 42106	2104-2105	Uint	Channel 1- Gain weight	Display the gain weight corresponding to the "calibration point selection", relative to the previous calibration point
42107 ~ 42108	2106-2107	Uint	Channel 2- Gain millivolts	Display the number of gain millivolts corresponding to the "calibration point selection", relative to the previous calibration point
42109 ~ 42110	2108-2109	Uint	Channel 2 gain weight	Display the gain weight corresponding to the "calibration point selection", relative to the previous calination point
42111 ~ 42112	2110-2111	Uint	Channel 3- Gain millivolts	Display the number of gain millivolts corresponding to the "calibration point selection", relative to the previous calibration point
42113 ~ 42114	2112-2113	Uint	Channel 3- Gain weight	Display the gain weight corresponding to the "calibration point selection", relative to the previous calibration point
42115 ~ 42116	2114-2115	Uint	Channel 4- Gain millivolts	Display the number of gain millivolts corresponding to the "calibration point selection", relative to the previous calibration point
42117 ~ 42118	2116-2117	Uint	Channel 4- Gain weight	Display the gain weight corresponding to the "calibration point selection", relative to the previous calibration point
Modbus Customize, readable and writeable				
7001	7000	Uint	Set Customize address	The address that will be replaced (7000-8600, 9000-10201 not writable)
7002	7001	Uint	Set mapping address	Alternative address: Address source according to this sheet (7000-8600, 9000-10201 not writable)
7003	7002	Uint	Set mapping length	Replace the length of the address (after writing this value , valid for the whole set of data)
7004	7003	Uint	Clear Map Group	Input the index of the corresponding array, range: 1-50, after input, you can clear the corresponding array: custom address, replacement address, replacement length
7005	7004	Uint	Custom address -1	The address to be replaced, read only
7006	7005	Uint	Map address -1	Alternative address - Address source according to this sheet, read only
7007	7006	Uint	Map length -1	Replace the length of the address, read only
...	...	...		
7152	7151	Uint	Customize address	The address to be replaced, read only

			-50	
7153	7152	Uint	Map address -50	Alternative address - Address source according to this sheet, read only
7154	7153	Uint	Map length -50	Replace the length of the address, read only
47155~47200	7154~7199	Reserved		
Communication parameter setting area, readable and writeable				
COM1-RS485 parameters				
48001	8000	Uint	Port	Initial value: 1; Range: 01-99
48002	8001	Uint	Baudrate	Initial value: 3-38400, range: 0-5 Corresponding to: 0-4800, 1-9600, 2-19200, 3-38400, 4-57600, 5-115200 respectively
48003	8002	Uint	Protocol	Initial value: 0-Modbus RTU, range: 0-Modbus RTU, 1-GM-Cont, 2-PRINT, 3-Modbus Customize
48004	8003	Uint	Data format	Initial value: 0 (8N1); Range: 0-8N1, 1-8E1, 2-8O1, 3-7E1, 4-7O1 Note: modbus and print only support 8-bit data bits.
48005	8004	Uint	Dword format	Initial value :0 (AB-CD) Range: 0-ab-cd, 1-CD-AB.
48006	8005	Uint	Send Gap	The time interval between frames when sending consecutively. Initial value: 20ms, range 0-5000ms
48012 ~ 48020	8006 ~ 48019	Reserved		
COM2-RS232 parameters				
48021	8020	Uint	Port	Reference RS485 parameters
48022	8021	Uint	Baudrate	
48023	8022	Uint	Protocol	
48024	8023	Uint	Data format	
48025	8024	Uint	Dword format	
48026	8025	Uint	Send Gap	
48027 ~ 48040	8026 ~ 8039	Reserved		
Network port communication parameters				
48041-48044	8040-8043	Uint	IP1-IP4	Initial value: 192.168.000.101, The order is the first to fourth IP; Range: 000.000.000.000-255.255.255.255
48045-48048	8044-8047	Uint	Subnet mask 1-4	Initial value: 255.255.255.000, The order is the first to fourth IP; Range: 000.000.000.000-255.255.255.255
48049-48052	8048-8051	Uint	Gateway 1- 4	Initial value: 192.168.000.001, The order is the first to fourth IP; Range: 000.000.000.000-255.255.255.255
48053	8052	Uint	Connect1 port	Initial value: 502, range: 0-65535, network communication port number Settings, 0 indicates that the connection is closed.
48054	8053	Uint	Connect1 protocol	Standard network port can be set, the range includes: Protocols are: 0-Modbus-RTU, 1-GM-Cont, 2-Modbus Custom, Default 0-Modbus-RTU.
48055	8054	Uint	Connect 1 Dword Format	Standard network port can be set, high and low byte mode, Modbus-RTU use. 0-AB-CD, 1-CD-AB, default: 0-AB-CD
48056	8055	Uint	Connect 1 Send Gap	When the communication protocol is 1-GM-Cont, this parameter is used to set the interval between consecutive transmissions. Range :0-5000ms.

				Default :20ms	
48057-48060	8056-8059	Uint	Connect2 Communication parameters	Except the initial value of the port number is 0, the rest of the reference connection port 1, (register address 8052-8055 parameter description)	
48061-48064	8060-8063	Uint	Connect3 Communication parameters		
48065-48068	8064-8067	Uint	Connect4 Communication parameters		
48069-48072	8068-8071	Uint	Connect 5 Communication parameters		
48071-48076	8072-8075	Uint	Connect6 Communication parameters		
48077	8076	Uint	PN/EIP/CCLINK write switch	Initial value: 0- integer weight; Range: 0- integer weight 1- floating point weight	
48078	8077	Uint	PN/EIP/CCLINK data type	Initial value: 0- integer weight; Range: 0- integer weight 1- floating point weight	
48079	8078	Uint	Bus TCP communication protocol	Range 0-1, 0: modbus-TCP, 1: modbus Customize, 2:MQTT, default 0	
48080-48150	8079-8149	Reserved			
GPRS Communication					
48151-48154	8150-8154	Uint	Target IP1-4	Range: 0-255, default: 192.168.000.101	
48155	8154	Uint	Destination port	Range: 0-65535, default: 502	
8156	8155	Uint	Heart rate	Range: 0-3600s, default: 30s, the interval for sending MQTT data packets	
8157	8156	Uint	Communication switch	Range: 0-1,0: OFF, 1: ON; Default: 0- OFF, whether to turn on GPRS communication	
48158	8157	Uint	Reactivate GPRS	Range: 1, write 1 reinitialize GPRS	
48159	8158	Uint	GPRS Current status	0: No error, the module is normal 1: The module is off 2: Module not found (reserved) 3: The SIM card cannot be found and is not inserted 4: SIM card error - Check for problems with signal, traffic, etc 5: Module communication is abnormal 6: The module is not responding 7: MQTT connection error 8: MQTT identifier is occupied 9: The MQTT server domain name is incorrect 10: MQTT is an unacceptable version of the protocol 11: MQTT server is unavailable 12: MQTT incorrect user name or password 13: MQTT connection is not authorized 14: MQTT topic subscription failed	
48160-48167	8159-8166	Uint	IMEI-1~IMEI-8	Read only, device identifier	
48168-48175	8167-8174	Uint	IMSI-1~IMSI-8	Read-only, unique identifier for the SIM card	
48176-48230	8175-8229	Reserved			
MQTT communication parameters					
48231 ~ 48234	8230 ~ 8233	Uint	MQTT server IP address -1~ IP		Range: 0.0.0.0-

			address -4	255.255.255.255, default: target IP address 192.168.000.101
48235	8234	Uint	MQTT server IP port number	Range: 0-65535 , default: 502
48236 ~ 48239	8235 ~ 8238	Uint	MQTT Upgrade server IP address -1 to IP address -4	Range: 0.0.0.0-255.255.255.255 , default: target IP address 119.136.032.70
48240	8239	Uint	MQTT upgrade server port number	Range: 0-65535 , default: 5555
48241	8240	Uint	Configure MQTT parameter switch	On, it will connect the server IP for MQTT parameter configuration (set the server IP and port number in advance), off:enter the normal communication state
48242 ~ 48311	8241 ~ 8310	Uint	MQTT connected client ID1- ID70	Read only area (in ASCII format, an address is 16bit, contains two ASCII, for example: 0X6B31 represents k1. and so on)
48312 ~ 48351	8311 ~ 8350	Uint	MQTT connected user name (1- 40)	
48352 ~ 48401	8351 ~ 8400	Uint	Password for MQTT connection (1-50)	
48402 ~ 48441	8401 ~ 8440	Uint	Subject name of MQTT subscription (1-40)	
48442 ~ 48481	8441 ~ 8480	Uint	Topic name published by MQTT (1-40)	
48482 ~ 48550	8481 ~ 8549	Reserved		
Print parameter				
48551	8550	Uint	Number of lines of header information; Range: 0-4, select how many header lines to use	
48552	8551	Uint	Number of lines of tail information; Range: 0-4, select how many tail lines to use	
48553	8552	Uint	Print interval; Initial value: 2. Range: 0-99, number of lines between each print	
48554	8553	Uint	Print content; Initial value: 0, display weight. Range: 0-6, optional: 0, display weight, 1, gross weight, 2, net weight, 3, net weight + tare weight (two lines), 4, all information (gross weight + net weight + tare weight)	
48555	8554	Uint	Print language; 0: Chinese 1: English, default 0: Chinese	
48556	8555	Uint	Information line selection; Range: 1-8, corresponding to header 1-4 and tail 1-4. 0 after power-on. After writing, read is the written value	
48557-48572	8556-8571	Uint	Character content of the printed message (16 characters); Ascii code of 0-9, a-z, A-Z, 'space', and '-' is supported	
48573~48600	8572-8599	Reserved		
Instrument alarm log and operation log, read-only area				
48601-48602	8600-8601	Uint	Alarm time -1	Alarm time: month,day,hour,minute. such as hex display: high:0x061C, low 0x0A07:06281007
48603-48604	8602-8603	Uint	Alarm Record -1	Alarm record: alarm content serial number, such as hex display; high: 0x0500: combination channel; Low: 0x0008: scale platform offset load

48605-48606	8604-8605	Uint	Alarm time -2	Refer to Alarm Time -1 and Alarm Record -1
48607-48608	8606-8607	Uint	Alarm Record -2	
48609-48610	8608-8609	Uint	Alarm time -3	
48611-48612	8610-8611	Uint	Alarm Record -3	
48613-48614	8612-8613	Uint	Alarm time -4	
48615-48616	8614-8615	Uint	Alarm Record -4	
48617-48618	8616-8617	Uint	Alarm time -5	
48619-48620	8618-8619	Uint	Alarm Record -5	
48621-48622	8620-8621	Uint	Alarm time -6	
48623-48624	8622-8623	Uint	Alarm Record -6	
48625-48626	8624-8625	Uint	Alarm time -7	
48627-48628	8626-8627	Uint	Alarm Record -7	
48629-48630	8628-8629	Uint	Alarm time -8	
48631-48632	8630-8631	Uint	Alarm record -8	
48633-48634	8632-8633	Uint	Alarm time -9	
48635-48636	8634-8635	Uint	Alarm Record -9	
48637-48638	8636-8637	Uint	Alarm time -10	
48639-48640	8638-8639	Uint	Alarm Record -10	
48641 ~ 48660	8642 ~ 8659	Reserved		
48661-48662	8660-8661	Uint	Operation time -1	Operation time: month, day, hour, minute, such as hex display: high 0x061C, 0x0A07: low 06281007
48663-48664	8662-8663	Uint	Operation Record -1	Operation record: (high:eight bits: channel:low 24 bits: serial number of page)
48665-48666	8664-8665	Uint	Modified value -1	Operation Value
48667-48668	8666-8667	Uint	Operation time -2	Refer to Operation Time -1, Operation Record -1, and Modified value -1
48669-48670	8668-8669	Uint	Operation Record -2	
48671-48672	8670-8671	Uint	Modified value -2	
48673-48674	8672-8673	Uint	Operation time -3	
48675-48676	8674-8675	Uint	Operation Record -3	
48677-48678	8676-8677	Uint	Modified value -3	
48679-48680	8678-8679	Uint	Operation time -4	
48681-48682	8680-8681	Uint	Operation Record -4	
48683-48684	8682-8683	Uint	Modified value -4	
48685-48686	8684-8685	Uint	Operation time -5	
48687-48688	8686-8687	Uint	Operation Record -5	
48689-48690	8688-8689	Uint	Modified value -5	
48691-48692	8690-8691	Uint	Operating time -6	
48693-48694	8692-8693	Uint	Operation Record -6	
48695-48696	8694-8695	Uint	Modified value -6	
48697-48698	8696-8697	Uint	Operating time -7	
48699-48700	8698-8699	Uint	Operation Record -7	
48701-48702	8700-8701	Uint	Modified value -7	
48703-48704	8702-8703	Uint	Operating time -8	
48705-48706	8704-8705	Uint	Operation log -8	
48707-48708	8706-8707	Uint	Modified value -8	
48709-48710	8708-8709	Uint	Operating time -9	
48711-48712	8710-8711	Uint	Operation Record -9	
48713-48714	8712-8713	Uint	Modified value -9	
48715-48716	8714-8715	Uint	Operating time -10	
48717-48718	8716-8717	Uint	Operation Record -10	
48719-48720	8718-8719	Uint	Modified value -10	
48721 ~ 48800	8720 ~ 8799	Reserved		
Function operation class address area (corresponding to coil function), read and write				
48801	8800	Uint	Zero	Write 1 Perform the Operation

48802	8801	Uint	Tare	Read as 0.
48803	8802	Uint	Clear tare	
48804	8803	Uint	Gross/net weight Switch	
48805	8804	Uint	Zero Calibration	
48806	8805	Uint	print	
48807	8806	Uint	Print Empty Line	
48808 ~ 48810	8807 ~ 8809	Reserved		
All system parameters reset				
48901	8900	Uint	Basic parameter reset	Write 1 Perform the corresponding reset Read as 0
48902	8901	Uint	Calibration parameters reset (reset calibration operation, scale parameters and basic parameters)	
48903	8902	Uint	Apply parameter reset	
48904	8903	Uint	Communication parameter reset	Write 1 Perform the corresponding reset Read as 0
48905	8904	Uint	Reset all parameters	
48906 ~ 48910	8905 ~ 8909	Reserved		
System time, readable-writeable				
48911	8910	Uint	year	Range: 2,124
48912	8911	Uint	month	Range: 1-12
48913	8912	Uint	day	Range: 0-31
48914	8913	Uint	hour	Range: 0-23
48915	8914	Uint	minute	Range: 0-59
48916	8915	Uint	second	Range: 0-59
48917 ~ 48980	8916 ~ 8979	Reserved		
Turn on Logo editing area, readable and writeable				
48981-48988	8980-8987	Uint	Edit Boot logo characters 1-8 (8 characters)	The sequence corresponds to the first 1-8 characters of the boot logo, which needs to be written into Ascii code, the range is 0-9,A-Z,a-z, space, '-'; Default: WELCOME space
48989 ~ 49000	8988 ~ 8999	Reserved		
Instrument System information area, read-only area				
410001	10000	Uint	Back-end software version (high byte)	If read 10000 , version 01.00.00
410002	10001	Uint	Back-end software version (low byte)	
410003	10002	Uint	Compile time (year)	
410004	10003	Uint	Compile time (month day)	
410005	10004	Uint	Language	0: Chinese; 1: English
410006-410018	10005-10017	Uint	Instrument serial number 13 characters	
410019-410030	10018-10029	Uint	Instrument 138 number 12 characters, indicating the instrument hardware version	
410031	10030	Reserved		
410032-410041	10031-10040	Uint	Instrument model characters 1 -10	Default GMT-H4
410042	10041	Uint	Attach board 01 Info	Range 0-1. 0 means none ,1 means there is an iot module
410043	10042	Uint	Attach board 02 Info	Range 0-4:0 indicates none, 1 indicates standard network port, and 2 indicates ProfiNet
410044	10043	Uint	Attach board 03 Info	Range 0-1:0 indicates none, 1 indicates there is an IO board, default:

				0
410045	10044	Uint	Combined Channel	bit0: channel 1, bit1: channel 2, bit2: Channel 3, bit3: Channel 4 ,1: Join the combination calculation, 0: do not join the combination calculation
410046 ~ 410100	10045 ~ 10099	Reserved		
410101-410106	10100-10105	Uint	MAC address of the instrument	
410107 ~ 410200	10106-10199	Reserved		
410201	10200	Uint	Calibrate parameter remote edit	0: OFF, 1: ON. Initial value: ON
410202	10201	Uint	Other parameters remote edit	0: OFF, 1: ON. Initial value: ON
Coil address				
Function operation class				
0x0001	0000	Bool	Zero	These are readable and writable coils Writing ON is valid Read as 0
0x0002	0001	Bool	Tare	
0x0003	0002	Bool	Clear Tare	
0x0004	0003	Bool	Gross/net weight switch	
0x0005	0004	Bool	Zero Calibration	
0x0006	0005	Bool	Print	
0x0007	0006	Bool	Print Empty Line	
0x0006-0x0010	0005 ~ 0009	Reserved		
Reset operation class				
0x0301	0300	Bool	Basic parameter reset	This area is only writeable Write ON to perform a reset Read 0(Note: reset all parameters, except the boot Logo)
0x0302	0301	Bool	Calibration parameters reset (reset calibration operation, scale parameters and basic parameters)	
0x0303	0302	Bool	Application parameter reset	
0x0304	0303	Bool	Communication parameter reset	
0x0305	0304	Bool	Reset all parameters	
0x0306-0x0400	0305-0399	Reserved		
IO status, read-only area				
0x0401	0400	Bool	Input 1 status	Read only area Read Return each input port status bit 0: invalid; 1 valid
0x0402	0401	Bool	Input 2 status	
0x0403	0402	Bool	Input 3 Status	
0x0404	0403	Bool	Input 4 Status	
0x0405-0x0450	0404 ~ 0449	Reserved		
0x0451	0450	Bool	Output 1 status	Read only area Read Return each output status bit 0: invalid; 1 valid
0x0452	0451	Bool	Output 2 status	
0x0453	0452	Bool	Output 3 status	
0x0454	0453	Bool	Output 4 status	
0x0455	0454	Bool	Output 5 status	
0x0456	0455	Bool	Output 6 status	
0x0457-0x0500	0456 ~ 0499	Reserved		
0x0501	0500	Bool	Calibration parameter remote edit	Read-only parameter area, get the status that whether remote edit is allowed, 1 enable, 0 disable
0x0502	0501	Bool	Other parameters remote edit	

11.2 GM-Cont (Continuous Send Protocol)

GMT-H4 Serial port protocol When "GM-Cont" is selected, data is continuously sent in the following format.

		Combination channel					
STX	Scale No.	Status 1	State 2	Weight value	CRC	CR	LF
02H	2-bit	1 bit	1 bit	6 bits	2 bits	0D	0A

Instruction:

Scale number -- 2 bits, display the current scale number, range: **01~99**;

Status **1 – 1 bit**, in the following format:

bit7	bit6		bit5	bit4		bit3	bit2		bit1	bit0
Fixed 0	no	0	0	t	0	0	0	0	0	0
	/h	1	0	kg	0	1	0.0	0	0	1
	/m	1	0	g	1	0	0.00	0	1	0
				lb	1	1	0.000	0	1	1
							0.0000	1	0	0
	Flow unit			Unit of Weight			Decimal point			

Status **2-1 bit**, in the following format:

bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Reserved	Reserved	Reserved	Gross /net weight	Positive/negative	Zero	Overflow	stabilize
Fixed 0	Fixed 1	Fixed 0	0- Gross weight 1- Net weight	0- positive 1- negative	0- non-zero 1- Zero	0- Normal 1- Overflow	0- Unstable 1- Stable

Weight value - 6 bits unsigned number; Returns "space space OFL space" when the weight is positive (negative) overflowed;

CRC -- 2 digits, checksum

All in front of the check digit number and converted to a decimal data, then take two bit converted to **ASCII** (ten in the former, one in the later). For example

If the following frame data:

(02 30 31 00 41 20 20 20 37 30 30 31 39 0D 0A

Add the sum of **02** to **20:5EF (Hex)** and convert to decimal **1519**. It can be calculated that the check codes for this data frame are **31 and 39**.

For example:

The current instrment automatically returns data: **02 30 31 08 49 20 20 32 31 34 38 35 31 0D 0A**

It is known that the current status of the instrument: in the net weight, stable state, the current weight value is **2148kg**.

11.3 Customize Modbus

The function address of the instrument can be customized into an address sheet for users to use

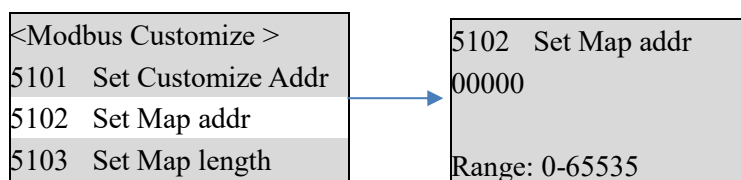
Operation steps:

- 1) Set up communication protocol: GMT - H4 serial ports, so protocol selection "Modbus customize"; Bus [Bus TCP communication] Select "Modbus Customize"
- 2) Customize write address: 50 groups can be written, after writing [Set customize Addr], [Set Map Addr], [Set Map Length] count as a group; Within each group, you can customize a piece of address, you can also customize 1 address (specific address can refer to Modbus custom protocol address)

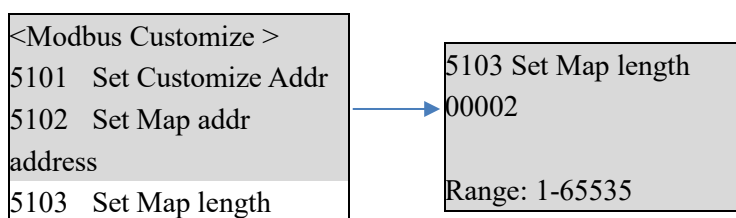
A. Set 【 Set customize Addr 】



B. Set 【 Set Map Addr 】



C. Settings 【 Set Map Length 】



Application examples:

Example 1: Write a single address: such as the combined weight of the address (0-1) to write a custom address table

- 1) [5101 Set Customize Addr]: write 300
- 2) [5102 Set Map Addr]: write 0
- 3) [5103 Set Map Length]: write 2

Verify: Open Modbus poll and see that address 300-301 is displayed as the current combined weight

Example 2: Write one piece address: For example, the address of the basic parameter (200-225) is written to the custom address sheet

- 1) [5101 Set Customize Addr] : write 700

2) [5102 Set Map Addr] : write 200

3) [5103 Set Map Length] : write 25

Verify: Open Modbus poll Software and View the data of addresses 700-725
display basic parameter

Note:

※ 【5103 Set Map Length】 The whole set of data will not take effect until the setting is complete.

※ After customizing the address, the communication protocol is modbus-rtu, and after modbus-tcp, it will be switched to the normal official communication address

11.4 PROFINET communication

The GMT-H4 display has two PROFINET-IO bus connection ports, LAN1 and LAN2, which can be connected to the PROFINET bus as a ProFINET-IO slave station.

The IP address of the instrument can be viewed in [Communication parameters] -- [Profinet]. MAC address can be found in 【System Parameters】 -- 【62 System Info 】 -- 【623 MAC Address】 .

11.4.1 Circular Address Parameters

GMT-H4 provides 116 bytes INPUT and 14 bytes OUTPUT, and the master station can read and control the state of the weighing display through these I/ O.

PN offset	Parameter name	Data type	Parameter Description
Weight and status parameters (read register, I address)			
0	The currently displayed combined force weight value	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), the default display: integer weight.
4	Status flag bit	Word	D15: Current weight is in calibration without weight status
			D14: Communication heartbeat (the value of the PN's communication heartbeat will be converted between 0 and 1 at a frequency of 1HZ after the connection is established)
			D13: Currently displayed is net weight, (distinguish which weight is currently displayed)
			D12: Combined force weight jump
			D11: Weight offset load
			D10: Abnormal force on the loadcell (loadcell weight jump, uneven force, loadcell overrange, configuration or parameter setting error)
			D9: Negative overflow of the combined force loadcells, lower than the allowable range of the loadcell voltage
			D8: Positive overflow of combined force loadcell, beyond the allowable range of loadcell voltage
			D7: Weight negative overflow, weight less than "-(Max range +9d)"
			D6: Weight positive overflow, weight greater than "Max range +9d"
			D5: Overflow condition (abnormal weight or loadcell)

			D4: Abnormal loadcell wiring (display alarm when abnormal loadcell wiring)
			D3: Displayed weight negative sign (means weight is negative)
			D2: Zero (weight in the range of 0+/-quarter d)
			D1: Millivolt unstable, (millivolt stable marker in calibration)
			D0: The weight is unstable
6	Error code 1	Word	D15: Write status, (Write data return status 0: No error, 1: error)
			D14: Calibration status (0: normal; 1: calibration failed)
			D13: unstable at calibration, waiting for stabilization
			D12: The net weight state does not allow taring
			D11: The weight is negative when clearing tare
			D10: Loadcell overflow positively when taring
			D09: Loadcell overflow negatively when taring
			D08: Unstable when taring
			D12: The net weight status does not allow zeroing
			D06: The remote zero switch is not enabled during remote zeroing
			D05: The loadcell overflow positively when zeroing
			D04: The loadcell overflow negatively when zeroing
			D03: Unstable when zeroing
			D02: Zero out of range
			D01: The zero is unstable during power-on
D00: The power-on zero is out of range			
Channel 1			
8	Current display weight	DWord	Currently displayed weight integer/weight floating point type (depending on the PN parameter data type on the instrument), the default displayed: integer value.
12	Current display pressure value	DWord	Pressure integer value /Weight floating point type currently displayed (depending on the PN parameter data type on the instrument), the default displayed: integer value.
16	Current loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), the default displayed: integer value.
20	Zero Calibrate voltage value	DWord	Current display of zero voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), the default displayed: integer value.
24	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
28	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
32	Status flag bit	Word	D15: Channel open (When the channel is closed, the status bits of the channel are all zeros)
			D13~D14: reserved

			D12: The loadcell configuration or parameter settings are incorrect
			D11: loadcell weight jumps
			D10: loadcell weight offset load
			D9: The loadcell load is unevenly biased
			D8: loadcell overrange (pressure value)
			D7: loadcell overflow negatively, below the allowable range of the loadcell voltage
			D6: loadcell overflow positively, beyond the allowable range of loadcell voltage
			D5: The signal cable is incorrectly connected or improperly connected
			D4: The loadcell excitation source may be short-circuited
			D3: The loadcell is not connected or the excitation source is improperly connected
			D2: The ADC is faulty
			D1: Weight is displayed as a negative number
			D0: The weight is unstable
Channel 2			
34	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the PN parameter data type on the instrument), default display: integer value.
38	Current display pressure value	DWord	Pressure value integer/Weight floating point type currently displayed (depending on the PN parameter data type on the instrument), default display: integer value.
42	Loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.
46	Zero Calibration voltage value	DWord	Current display of zero voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.
50	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
54	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
58	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 3			
60	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the PN parameter data type on the instrument), default display: integer value.
64	Current display pressure value	DWord	Pressure value integer/Weight floating point type currently displayed (depending on the PN parameter data type on the instrument), default display: integer value.
68	Loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.
72	Calibrate the zero voltage value	DWord	Current display of zero integer voltage/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.

76	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
80	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
84	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 4			
86	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the PN parameter data type on the instrument), default display: integer value.
90	Current display pressure value	DWord	Pressure integer value/Weight floating point type currently displayed (depending on the PN parameter data type on the instrument), default display: integer value.
94	Loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.
98	Zero Calibrate voltage value	DWord	Current display of zero integer voltage/weight floating point type (depending on the PN parameter data type on the instrument), default display: integer value.
102	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
106	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
110	Status flag bit	Word	Reference Channel 1 Status flag bit
112	Read out value	DWord	The master station requests the data returned by the instrument, the value obtained according to the "address requested to read"
Function operation and parameter modification (write register, Q address)			
0	Functional operations	Word	D7-D15 Reserved
			D6: Print Empty Line
			D5: Print
			D4: Zero calibration
			D3: Gross/net weight switch
			D2: Clearing tare
			D1: Tare
			D0: Zero
2	Request to write value modbus address	DWord	Modbus write operation address (note that the MODBUS register will not be written when the address changes) This parameter modifies the Modbus register address range supported by the interface module to be limited to writable open address.
6	Input data	DWord	Modbus write operation value, the data is written to the "modbus address of the value to be written" (note that it is written to the instrument only when the value is changed)
10	The address of the request read	DWord	Modbus read operation address (note that you cannot read two-word addresses, write an odd-numbered address). This parameter modification interface module supports the MODBUS register address range only to readable open addresses.

10.4.2 Device Description file GSD

The device description file and connection method of GMT-H4 can be downloaded from the website of Shenzhen General Measure Technology Co., LTD. (www.gmweighing.com).

11.5 EthernetIP Communication

The GMT-H4 display has two EthernetIP bus connection ports, LAN1 and LAN2, which can be connected to the EthernetIP bus as an EthernetIP slave station.

The instrument IP address can be viewed in 【COM Param】 -- 【Ethernet/IP】 ; MAC address in 【System Param】 -- 【System Info】 -- 【MAC address】 to check.

11.5.1 Circular Address parameters

GMT-H4 provides 116 bytes INPUT, 14 bytes OUTPUT, and the master station can read and control the state of the weigh indicator through these I/ O.

PN offset	Parameter name	Data type	Parameter Description
Weight and status parameters (read register, I address)			
0	The currently displayed combined force weight value	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display: integer weight.
2	Status flag bit	Word	D15: Current weight is in calibration without weight
			D14: Communication heartbeat (the value of the PN's communication heartbeat will be converted between 0 and 1 at a frequency of 1HZ after the connection is established)
			D13: Currently displayed net weight, (distinguish which weight is currently displayed)
			D12: Combined force weight jump
			D11: Weight offset load
			D10: Abnormal force on the loadcell (loadcell weight jump, uneven force, loadcell overrange, configuration or parameter setting error)
			D9: Negative overflow of the resultant loadcell, lower than the allowable range of the loadcell voltage
			D8: Positive overflow of resultant loadcell, beyond the allowable range of loadcell voltage
			D7: Weight negative overflow, weight less than "-(Max range +9d)"
			D6: Weight positive overflow, weight greater than "Max range +9d"
			D5: Overflow condition (abnormal weight or loadcell)
			D4: Abnormal loadcell wiring (display alarm when abnormal loadcell wiring)
			D3: Display weight negative sign (displayed weight is negative)
			D2: Zero (weight in the range of 0+/- -quarter d)
			D1: Millivolt unstable, (millivolt stable marker at calibration)

			D0: The weight is unstable
3	Error code 1	Word	D15: Write status, (Write data return status 0: No error 1: error)
			D14: Calibration state (0: normal; 1: calibration failed)
			D13: Unstable at calibration waiting for stabilization
			D12: The net weight state does not allow taring
			D11: The weight is negative when the tare is removed
			D10: loadcell overflow positively when taring
			D09: loadcell overflow negatively when taring
			D08: Unstable when taring
			D12: The net weight status does not allow zeroing
			D06: The remote zero switch is not enabled during remote zero
			D05: The loadcell overflow positively when zeroing
			D04: The loadcell overflow negatively when zeroing
			D03: Unstable when zeroing
			D02: Zero out of range
			D01: The zero is unstable during power-on
			D00: The power-on zero is out of range
Channel 1			
4	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default displayed:integer value
6	Current displayed pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument) currently displayed, default displayed: integer value
8	Current loadcell voltage value	DWord	The current display of the loadcell voltage integer/weight floating point type (depending on the parameter data type on the instrument), default displayed: integer value
10	Zero Calibration voltage value	DWord	Current display zero voltage integer/weight floating point type (depending on the parameter data type on the instrument), default displayed: integer value.
12	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
14	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
16	Status flag bit	Word	D15: Channel open (When the channel is closed, the status bits of the channel are 0)
			D13 to D14: reserved
			D12: The loadcell configuration or parameter Settings are incorrect
			D11: Loadcell weight jumps
			D10: Scale offset load
			D9: The loadcell load is unevenly biased
			D8: loadcell overrange (pressure value)
			D7: loadcell overflow negatively, lower than the loadcell voltage allowed range

			D6: loadcell overflow positively, beyond the allowable range loadcell voltage
			D5: The signal cable is incorrectly connected or improperly connected
			D4: The loadcell excitation source may be short-circuited
			D3: The loadcell is not connected or the excitation source is improperly connected
			D2: ADC failure
			D1: Weight is displayed as a negative number
			D0: The weight is unstable
Channel 2			
17	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), Default displayed: integer value.
19	Current displayed pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument) currently displayed, Default displayed: integer value.
21	Current loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the parameter data type on the instrument), Default displayed: integer value.
23	Zero calibrate voltage value	DWord	Current display zero voltage integer/weight floating point type (depending on the parameter data type on the instrument), Default displayed: integer value.
25	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
27	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
29	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 3			
30	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), Default displayed: integer value
32	Current displayed pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument) Default displayed: integer value
34	Current loadcell voltage value	DWord	Currently displayed loadcell integer voltage/weight floating point type(depending on the parameter data type on the instrument), Default displayed: integer value
36	Zero calibrate voltage value	DWord	Current display zero voltage integer/weight floating point type (depending on the parameter data type on the instrument), Default displayed: integer value

38	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
40	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
42	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 4			
43	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), Default displayed: integer value.
45	Current displayed pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument) Default displayed: integer value.
47	Current loadcell voltage value	DWord	Currently displayed loadcell voltage integer/weight floating point type (depending on the parameter data type on the instrument), Default displayed: integer value.
49	Zero calibration voltage value	DWord	Current display zero integer voltage/weight floating point type (depending on the parameter data type on the instrument), Default displayed: integer value.
51	Loadcell Sensitivity	DWord	Integer, sensor sensitivity calibrated with theoretical values
53	Loadcell Range	DWord	Integer, the sensor range calibrated with theoretical values
55	Status flag bit	Word	Reference Channel 1 Status flag bit
56	The Read value	DWord	The master station requests the data returned by the instrument, the value obtained according to the "address requested to read"
Function operation and parameter modification (write register, Q address)			
0	Functional operations	Word	D7-D15 Reserved
			D6: Print Empty Line
			D5: Print
			D4: Zero Calibration
			D3: Gross/net weight switch
			D2: Clear tare
			D1: Tare
			D0: Zero
1	Request to write value modbus address	DWord	write operation Modbus address (note that the MODBUS register will not be written when the address changes) This parameter modifies the Modbus register address range supported by the interface module to be limited to writable open address..
2	Input data	DWord	Modbus: write operation value, the data will be written to the "request to write the value of the modbus address" (note that only when the value is changed will be written into the instrument)
5	The request read address	DWord	Modbus read operation address (note that you cannot read two-word addresses, write an odd-numbered address). This parameter modification interface module supports the MODBUS register address range only to readable open

			addresses.
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11.5.2 Acyclic parameters

Parameter name	Initial value	Parameter description
PWR-ON Zero Range	0	Range: 0 to 100 (percentage of full capacity)
Clear Zero Range	2%	1% - 99%
STAB Range	1	0-99d
STAB Time	1000	1-5000ms
TrZero Range	3	0-99d
TrZero Time	1000	1-5000ms
Digital Filter	8	0-9
STAB Filtering	80	0-99
Unit	kg	t,kg,g,lb
Decimal point	0	Range: 0; 0.0; 0.00; 0.000; 0.0000
Division	d=1	instrument indicates the minimum change in value Range: 1,2,5,10,20,50
Full Scale	999999	The maximum indicator value of the instrument, generally take the loadcell range. Range: 1-999999. When out of range (" data out of range ") prompt message, so as not to damage the loadcell by weighing overpressure.

11.5.3 Device description file EDS

The device description file and connection method of GMT-H4 can be downloaded from the website of Shenzhen General Measure Technology Co., LTD. (www.gmweighing.com).

11.6 CCLink IE Field Basic Communication

When selecting CCLink IE Field Basic extension communication, it can communicate with PLC, and the IP of the instrument and PC and PLC need to be in the same LAN. The IP address of the instrument can be set in 【COM Param】 -- 【CCLINK IE】 ; MAC address can be viewed in 【System Param】 -- 【System Info】 -- 【MAC address】 . After the project connection is established successfully, you can set the parameters based on the following parameter addresses.

This instrument occupies a link station, each link station can accommodate the number and address description:

1) The number of bits is transmitted to each station by circular transmission. In the master station, the input data is RX:64 bits (slave -> master); The output data is RY: 64 bits (Master -> Slave).

2) Word count is transmitted to each station using circular transmission. In the master station, enter the data field RWr: 32 words (slave -> master) (Unit is byte); Output data area RWw: 32 words (Master -> Slave).

11.6.1 Loop address parameters

Offset	Parameter name	Data type	Parameter Description
Weight and status parameters (read register, I address)			

RWr0- RWr1	Currently displays combined force weight value	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display: integer weight.
RWr2	Status flag bit	Word	D15: The current weight is calibration without weight D14: Communication heartbeat (the value of the PN's communication heartbeat will be converted between 0 and 1 at a frequency of 1HZ after the connection is established) D13: Currently displayed net weight, (distinguish which weight is currently displayed) D12: Combined force weight jump D11: Weight offset D10: Abnormal force on the loadcell(loadcell weight jump, uneven force, loadcell overrange, configuration or parameter setting error) D9: Negative overflow of the combined force loadcell, lower than the allowable range of the loadcell voltage D8: Positive overflow of the combined force loadcell, beyond the allowable range of loadcell voltage D7: Weight negative overflow, weight less than "-(Max range +9d)" D6: Weight positive overflow, weight greater than "Max range +9d" D5: Overflow condition (abnormal weight or loadcell) D4: Abnormal loadcell wiring (display alarm when abnormal loadcell wiring) D3: Displayed weight negative sign (displayed weight is negative) D2: Zero (weight in the range of 0+/- -quarter d) D1: Millivolt unstable, (millivolt stable marker at calibration) D0: The weight is unstable
RWr3	Error Code 1	Word	D15: Write status, (Write data return status 0: No error 1: error) D14: Calibration state (0: normal; 1: calibration failed) D13: Unstable when calibration, waiting for stabilization D12: The net weight state does not allow taring D11: The weight is negative when the tare is removed D10: Loadcell overflow positively when taring D09: Loadcell overflow negatively when taring D08: Unstable when taring D12: In net weight status, does not allow zeroing D06: The remote zero switch is not enabled during remote zero D05: The loadcell overflow positively when zeroing D04: The loadcell overflow negatively when zeroing D03: Unstable when zeroing D02: Zero out of range D01: The zero is unstable during power-on D00: The power-on zero is out of range

Channel 1			
RWr4- RWr5	Currently display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display: integer value.
RWr6- RWr7	Current display pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument) default display: integer value.
RWr8	Status flag bit	Word	D15: Channel open (When the channel is closed, the status bits of the channel are all zero)
			D13 to D14: Reserved
			D12: The loadcell configuration or parameter settings are incorrect
			D11: loadcell weight jumps
			D10: weighing platform offset load
			D9: The loadcell load is unevenly biased
			D8: Loadcell overrange (pressure value)
			D7: Loadcell overflow negatively, below the allowable range of the loadcell voltage
			D6: loadcell overflow positively, beyond the allowable range of loadcell voltage
			D5: The signal cable is incorrectly connected or improperly connected
			D4: The loadcell excitation source may be short-circuited
			D3: The loadcell is not connected or the excitation source is improperly connected
			D2: ADC failure
			D1: Weight is displayed as a negative number
D0: The weight is unstable			
Channel 2			
RWr9 - RWr10	Current display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display:integer value
RWr11 - RWr12	Current display pressure value	DWord	Pressure integer value/Weight floating point (depending on the parameter data type on the instrument), default display:integer value.
RWr13	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 3			
RWr14 - RWr15	Currently display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display:integer value..
RWr16 - RWr17	Current display pressure value	DWord	Pressure value integer/Weight floating point (depending on the parameter data type on the instrument) default display: integer value.
RWr18	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 4			
RWr19 - RWr20	Currently display weight	DWord	Currently displayed weight integer/weight floating point (depending on the parameter data type on the instrument), default display: integer value..

RWr21 - RWr22	Current display pressure value	DWord	Currently displayed pressure integer value/weight floating point (depending on the parameter data type on the instrument), default display: integer value.
RWr23	Status flag bit	Word	Reference Channel 1 Status flag bit
RWr24 - RWr25	Read value	DWord	The master station requests the data returned by the instrument, the value obtained according to the "address requested to read"
Function operation and parameter modification (write register, Q address)			
RY6	Functional operation	Bit	D6: Print Empty Line
RY5			D5: Print
RY4			D4: Zero Calibration
RY3			D3: Gross/net weight switch
RY2			D2: Clear tare
RY1			D1: Tare
RY0			D0: Zero
RWw0 - RWw1	Request written value modbus address	DWord	Modbus: write operation address (note that the MODBUS register will not be written when the address changes) This parameter modifies the Modbus register address range supported by the interface module to be limited to writable open address.
RWw2 - RWw3	Input data	DWord	Modbus: write operation value, the data will be written to the "request to write the value of the modbus address" (note that only when the value is changed will be written into the instrument), this parameter modifies the interface module support MODBUS address range is limited to 200-1463 .
RWw4 - RWw5	The address request to read	DWord	Modbus: read operation address (note that you cannot read two-byte addresses, write an odd-numbered address). This parameter modification interface module supports the MODBUS register address range only to readable open addresses.

11.6.2 Acyclic parameters

Refer to the non-cyclic parameters [section 11.5.2 of EtherNet/IP](#). Additionally, the CCLinkIE can also read the non-cyclic parameters of the zero-point voltage values of each channel, as follows.

Parameter name	Initial value	Parameter description
CH1-zero voltage value	//-	- 150,000 to 150,000, read only
CH2-zero voltage value	//	- 150,000 to 150,000, read only
CH3-zero voltage value	//	- 150,000 to 150,000, read only
CH4-zero voltage value	//	- 150,000 to 150,000, read only

11.6.3 Device Description file CSP

The device description file and connection method of **GMT-H4** can be downloaded from the website of Shenzhen General Measure Technology Co., LTD. (www.gmweighing.com)..

Chapter 12 Product dimensions

