



GMT-X4

User's Manual

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Warnings

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

Keep the meter well grounded.

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

Standards & Certifications

Product standard: **GB/T 7724-2008**

Verification Regulation: **JJG 669-2016**

CMC accuracy grade 3 (6000e);

Guangdong system 0000000048;

Safety certification: **CE**

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Chapter 1 Overview

1.1 Functions and features

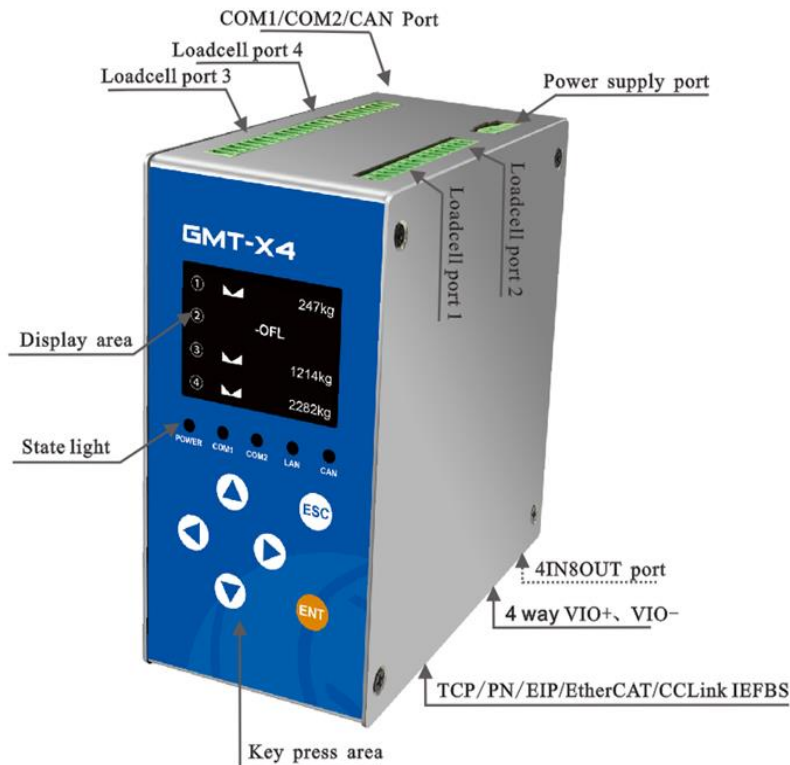
Shell Type	DIN clamp rail mounting (national standard 35mm guide rail), stainless steel housing	
Display	160 * 128 1.96 " white light OLED	
Language	Chinese and English are supported	
Preset point function	8 way comparator 5 comparison methods optional	
Channel free combination function	You can choose more than two channels to combine, you can set the parameters after the combination	
Port	Load cell interface	4 6-wire analog sensor scale interfaces for up to 40 350Ω sensors
	1 way 485 interface	Supports modbus RTU as well as continuous mode
	1 way 232 interface	
	IO interface	4 in 8 out transistor input/output interface, low level effective
	Optional 1	1 CAN OPEN interface, support CAN communication
	Optional 2	Support 1 analog output interface in combination mode (current/voltage optional)
	Optional 3	Single network port, TCP/IP supported
		Profinet bus interface
		Ethernet/IP bus interface
		EtherCAT Bus interface
		CCLink IE Field Basic Bus interface

1.2 Technical Specifications

Power supply	24VDC (18 to 36VDC)
Housing size	62 * 134 * 127.5 (mm)
Product weight	883g
Certified working environment	-10 ~ 40°C ; No condensation in 90%R.H
Working environment	-20 ~ 60°C ; No condensation in 90%R.H
Storage environment	-40 to 60 ° C ; No condensation in 90%R.H
Maximum power consumption	10W
Load cell excitation voltage	5V 200mA(MAX)
Load cell requirements	4 analog sensor interfaces, up to 40 350Ω sensors, support 1mV/V, 2mV/V, 3mV/V sensitivity
Input sensitivity	0.1 uV/d
Input range	0.00 ~ 15mV (3 mV/V for sensor)
Nonlinear	0.01 % F.S
A/D sampling speed	50; 60; 100; 120; 200; 240; 400; 480; 800; 960 (SPS)
Maximum display accuracy	1/1000000
Keyboard	6-key sounding keyboard
Decimal Places	0, 0.0, 0.00, 0.000, 0.0000; 5 to choose from
Overload Display	OFL

Chapter 2 Panel and Keys

2.1 Front Panel description



Status indication:

- **POWER:** Power lamp, when the meter is powered on, the indicator lights up.
- **COM1:** Communication indicator. After the connection of RS485 is successful, the indicator blinks during data communication.
- **COM2:** Communication indicator. After RS232 connection is successful, this indicator blinks when data communication is performed.
- **LAN:** Communication indicator. This indicator blinks during network port communication/bus communication.
- **CAN:** communication indicator, **which** blinks during CAN communication.

2.2 Key Description

GMT-X4 has a total of 6 key functions. The functions of short press and long press are different. The key diagram is shown in the picture below:

Keys	Interface	Short press	Hold
	Main interface	Weight/analog display	Weight and resultant load cell voltage value switch display
	Menu interface	Previous Sub Parameter	/
	Digital input	Data or letter +1	/
	Options classes	Previous Sub Parameter	/
	Main interface	Peel/peel operation	Gross/net weight mode switch
	Menu interface	Next Sub Parameter	/

	Digital input	Data or letter -1	/
	Options classes	Next Sub Parameter	/
	Main interface	View tare values	Preset tare values
	Menu interface	Previous main parameter	/
	Digital input	Move the number position to the left	/
	Options classes	/	/
	Main interface	Switch in order to display load cell of the weight value, voltage value, pressure value, main interface	Quickly enter the automatic calibration scale zero interface, display the voltage value of each channel, long press ENT to perform zero calibration scale.
	Menu interface	Next main parameter	/
	Digital input	Move the number position to the right	/
	Options classes	/	/
	Main interface	Menu page	Quickly view the front and back software version, compile date, and firmware information
	Menu interface	Confirm selection	/
	Digital input	Confirm selection	/
	Options classes	Confirm selection	/
	Main interface	Quick zeroing (gross weight mode valid)	/
	Menu interface	Return to previous level	/
	Digital input	Exit	/
	Options classes	Back out to the current option	/

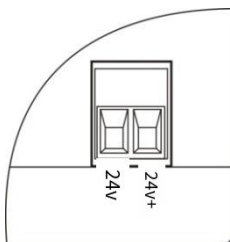
2.3 Alarm Tips

Alarm Tips	Instructions
"Load cell Over"	Positive sensor overflow
"ADC Fault"	EX+ and EX- shorting
"1#/2#/3#/4#" Channel Error"	When one or both channels overflow, "Corresponding channel exception" is displayed directly.
"MultiChannel Error"	If more than two channels overflow, press  the button to view the corresponding abnormal channel number

Chapter 3 Installation and Wiring

3.1 Connection of Power Supply

The GMT-X4 weight transmitter enables 24V power supply. The wiring of the power terminal is shown below:



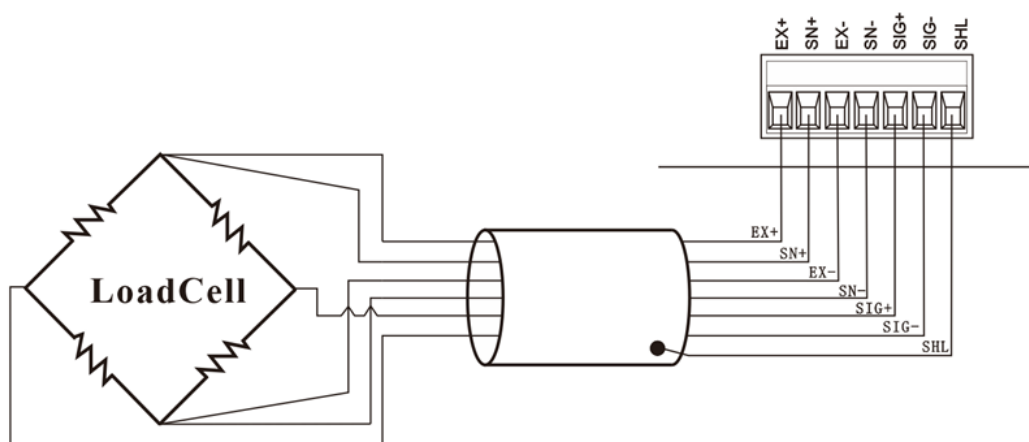
Note: This product uses 24V DC power supply,
Using 220V AC power will permanently damage the meter.

3.2 Sensor Connection

GMT-X4 weight transmitter provides four-channel sensor 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	Power positive	Induction positive	Power negative	Induction negative	Positive signal	Signal negative	Shielded wire
Four-wire	Power positive		Power negative		Signal positive	Signal negative	Shielded wire

※ When connecting a four-wire sensor, the **EXn+** and **SNn+** ports, **EXn-** and **SNn-** ports must be short-circuited. Otherwise, the weight data of the meter is not read properly.



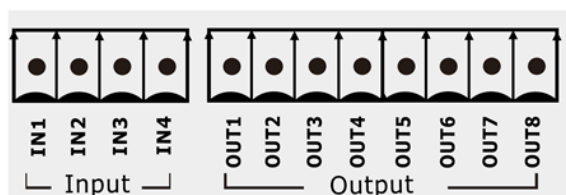
Note:

1. As the output signal of the load cell is an analog signal sensitive to electronic noise, shielded cables should be used for load cell wiring and laid separately from other cables, especially away from AC power supply
2. For the occasions with short transmission distance and little temperature change or low accuracy requirements, four-wire load cell can be selected. However, for applications requiring high transmission distance or accuracy, a six-wire load cell should be selected.

3. For the application of multi-load cell parallel connection, the sensitivity (mV/V) of each load cell should be consistent.

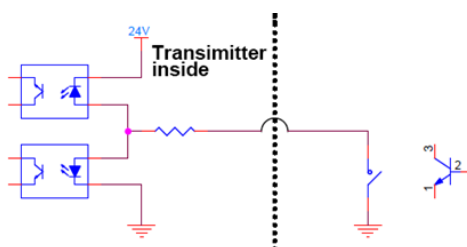
3.3 Switch quantity interface connection

GMT-X4 weight transmitter switch quantity is optional interface, **order need to declare**. 4 input port 8 output, IO input, output interface factory default low level effective. Transistor output mode, each drive current **200mA**.



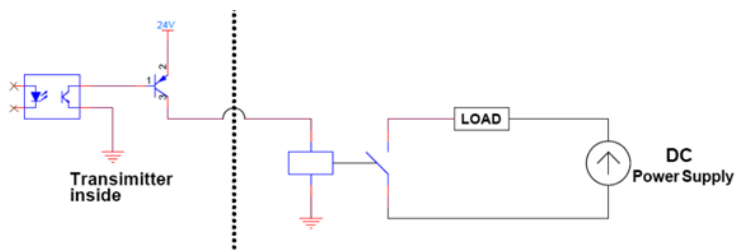
IO Port Diagram

Input diagram:



Low level mode

Output diagram:



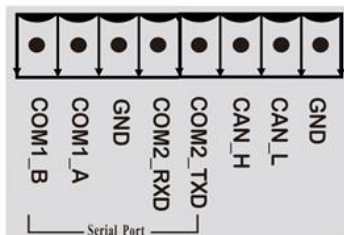
Low level mode

The default definition is as follows:

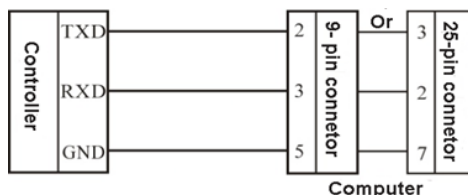
Output		Input	
OUT1	NONE	IN1	NONE
OUT2	NONE	IN2	NONE
OUT3	NONE	IN3	NONE
OUT4	NONE	IN4	NONE
OUT5	NONE		
OUT6	NONE		
OUT7	NONE		
OUT8	NONE		

3.4 Serial Port Connection

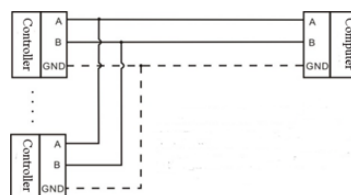
The GMT-X4 instrument is equipped with two serial ports as standard: one **RS485 port** and one **RS232 port**.



RS232 connection mode:



RS485 connection mode:



※GND is ground of RS485, it can very much improve communication quality via connecting with GND by low-resistance wire when there is a lot of disturbance in working field.

※ GND must be connected in RS232 mode

3.4.1 Troubleshooting Serial Port

If serial port can't communicate, please check:

- Refer above to check line, make sure connection is correct.

RS232 must connect 3 lines, **Rx, Tx, GND**

RS485 must connect line **A, B**

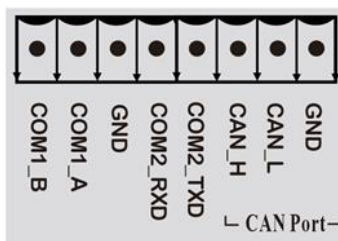
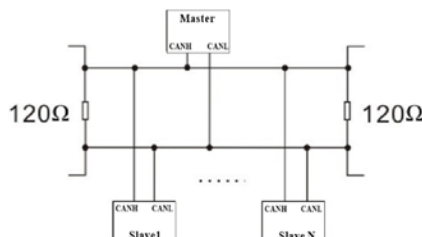
- Make sure connecting port parameters are the same to computer.

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

3.5 CAN Connection

Support **1 way CAN** communicate interface, can communicate with computer. GMT-X4 module can connect to bus network as a slave station module, baud rate support **100K, 125K, 250K, 500K, 1000K**.

Connect to **CAN** bus network, connect method refer to below charts, note bus network terminal need to add adaptive resistance.



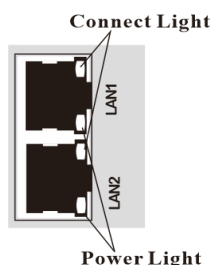
3.6 NetCOM Connection

GMT-X4 products support **TCP-IP** network ports and bus interfaces. Support **Modbus TCP, Profinet, Ethernet CAT, EthernetIP, CCLink IE Field Basic bus protocol** (optional fuction,make statement when order) .

1) When choose NetCOM, support TCP protocol; LAN 1 can communicate, LAN2 disabled temporarily

2) When **communicate with PN/EIP/CC-Link IE Filed Basic, it can be connected to any network port of the instrument for communication.**

3)Ethernet CAT communication, LAN2 as the entrance, and more than one device connection, between the devices to serial connection, distinguish the entrance and exit order.



3.6.1 Troubleshooting Network Port Faults

If the network port cannot communicate, check:

- Check network port indicators.

The hardware connection is normal, and the internal indicator of the instrument is steady on.

The network cable is connected properly, and the connection indicator is blinking.

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

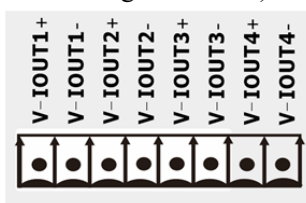
○ Confirm that GMT-X4 can be pinged from the network. If not, check the hardware interface section.

- Check whether **IP** conflicts exist.

- Restart the meter.

3.7 Analog connection

GMT-X4 has analog output function (optional function, order to declare), the interface is as follows: **V-IOUTx+** (positive electrode), **V-IOUTx-** (negative electrode) (Note: x=1~4, indicating 4 channels). The combined mode only supports **V-IOUT1+** and **V-IOUT1-** analog

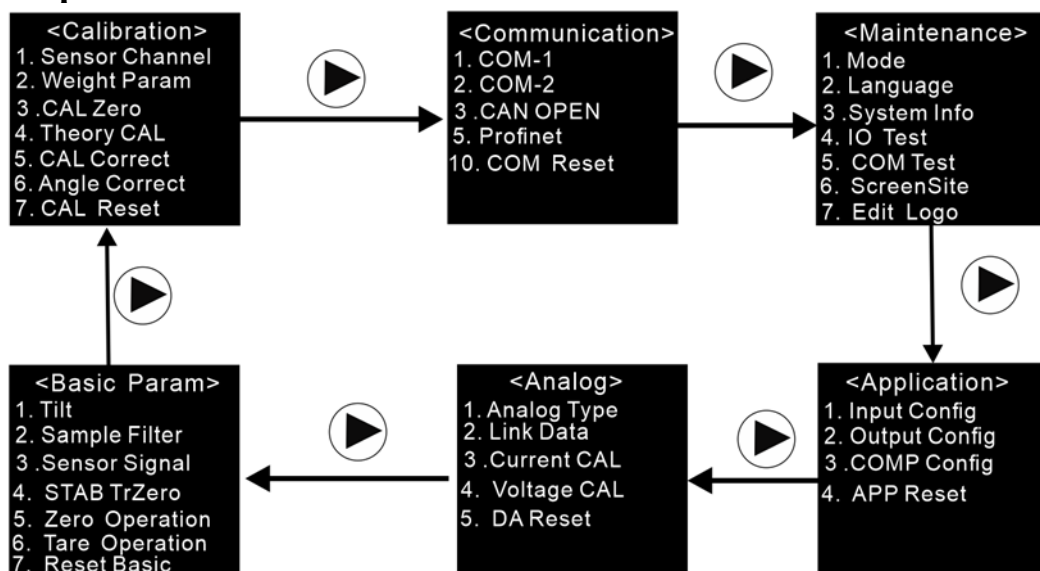


output.

Analog output is divided into **voltage output type** and **current output type**, supporting **4~20mA, 0~20mA, 0~24mA, -5~5V, -10~10V, 0~5V, 0~10V**. Users can choose the corresponding mode in the output mode of analog parameters.

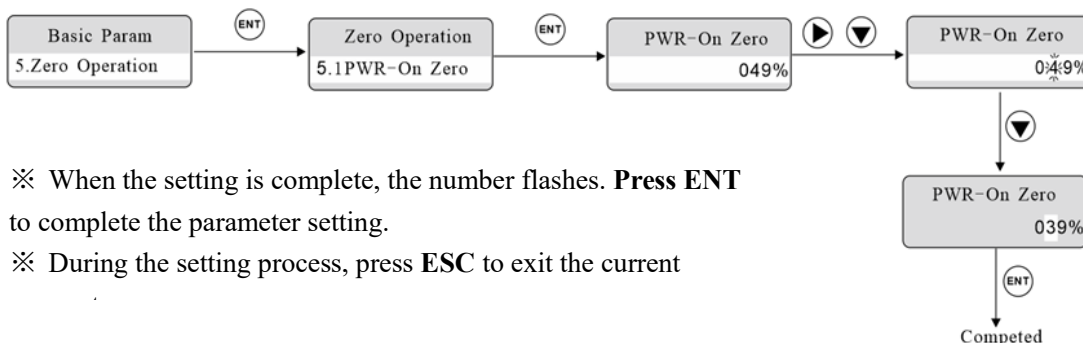
[For](#) analog mode and calibration, please refer to [Section 8 Analog Parameters](#).

Chapter 4 Menu overview



4.1 Parameter selection and setting

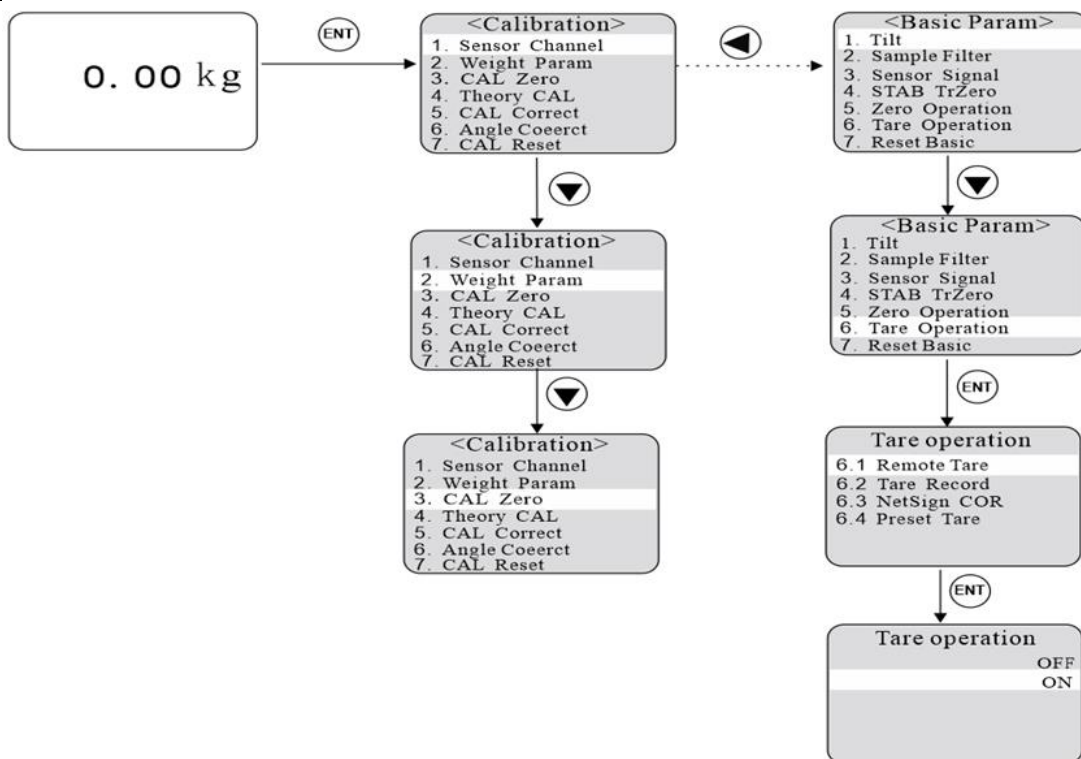
Parameter value setting: (Set the power-on reset range from **49%** to 30%)



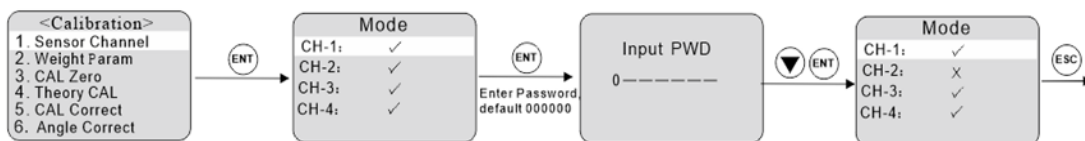
※ When the setting is complete, the number flashes. **Press ENT** to complete the parameter setting.

※ During the setting process, press **ESC** to exit the current

Parameter selection: (Select tare operation parameter)



Channel combination setting: (Switch to the mode of three channel combination)



※ For the channel that does not need to be combined, **press ENT** to switch from ✓ to ✗.

※ After setting, press **ESC** key to complete the combination mode channel selection.

Chapter 5 Basic parameters

5.1 Basic parameters

Parameter Items	Default values	Instructions
1.Tilt		
Tilt	0	Range: 0-999999 ; When the weight difference between the two corners reaches this threshold, the feeding tilt alarm is carried out; Set to 0 without alarm.
2. Sample Filter		
Set filtering parameters		
Digit-Filter	4	Range: 0-9 ; The larger the number, the higher the filtering intensity, but the meter response time will be longer.
Adv. Filter	00	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
Sample Rate	200	Range: 50; 60; 100; 120; 200; 240; 400; 480; 800; 960 (times/second).
3 .Sensor signal		
Set the sensor's signal range		
Sensor signal	0-10mV	Range: 0-5mV; 0-10mV; 0-15mV; -5-5mV; -10-10mV; -15-15mV . Transmitter adjusts the signal acquisition range according to the input range to ensure more accurate metering. Select the negative signal range option, millivolts can display negative numbers, you can calibrate zero and gain in the negative millivolt range.
4. STAB TrZero		
Set the parameters of stable zero pursuit		
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
STAB Timer	1000ms	Range: 1-5000ms . If the range of weight variation does not exceed the stability range during this time, the weight is stable
TrZero Range	0d	Range 0-99d . 0 : Turn off zerochasing. Non-0 : If the weight change is less than the zero range during the zero tracking time, the system automatically tracks the zero position.
TrZero Timer	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.
5. Zero Operation		
Set the zeroclear parameters		
PWR-On Zero	0	Range: 0~101 (youdaoplaceholder8 full scale %); 0 : disable the automatic zero clearing function on power-on. 1-100 : clear zero according to 1-100% of the maximum range; 101 : Restore the

		last zero point before the critical machine.
Remote Zero	ON	Set to ON , you can clear zero through the communication port; If it is set to OFF , it cannot clear the communication port.
Zero Range	20%	Range: 1 to 99 (you da o placeholder 8 full scale %).
6. Tare Operation		Set the tare operation parameters
Remote Tare	ON	Optional: OFF : The communication port cannot be peeled; ON : The skin can be removed through the communication port.
Tare Record	OFF	Range: OFF ; ON : After power off and restart, the instrument still retains the previous tare weight.
NetSign COR	Off	Optional: Close; Corrected tare; Return gross weight.
Preset Tare	0	Range: 0 ~ Max range, write tare.
7. Reset Basic		
Reset Basic	//	Perform factory reset operations on basic parameters

5.2 Zero Operation

Zero success condition:

- 1) Weighing platform stable; 2) Weight is in zero range.

Zero operation:

- 1) Press Zero; 2) Zero input port is valid; 3) communicate port zero (Remote Zero is ON)

5.3 Tare function

Tare operation ON/OFF:

ON/OFF serial port with **IO** tare; This set to ON for tare setting operation.

Tare Record:

ON/OFF Tare Record function. If turn ON, power off restart, retain tare weight.

NetSign COR:

Disable: NetSign have no operation.

Correct Tare: When transmitter in net weight status, the net weight is negative and weight is stable, then indicator will correct tare value to ensure Net weight is not negative.

BackToGross: When transmitter in net weight status, the net weight is negative and weight is stable, then indicator will back to gross weight status

Preset Tare:

Set tare weight, if the value is not 0, then this tare weight is used for tare.

※NOTE: ① The transmitter is in GW state, when clear tare, transmitter record tare weight, enter NW mode.

② The transmitter can't be ZERO in the mode of NW display.

Chapter 6 Calibration parameters

When the GMT-X4 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.

6.1 Calibration parameters

argument	Initial values	Instructions
1 Sensor channel		
Work mode	Four channel combinations	Select the channel number you want to combine and press ENT to toggle the selection.
2 Weight Parameters		
Unit	kg	Range: t; kg; g; lb
Decimal point	0	Range: 0; 0.0; 0.00; 0.000; 0.0000
Division	1	The minimum change in the value of the instrument Range: 1,2,5,10,20,50
Full Scale	10000	The maximum indicator value of the instrument, generally take the sensor range. Range: minimum division * 1000000 can be set. When out of range ("data out of range ") prompt information, so as not to damage the sensor by weighing overpressure.
Use T-CAL	OFF	Enable theoretical value calibration to take effect; Range: OFF; ON .
Weight Calibration (Use T-CAL is OFF, the following parameters are valid)		
Zero calibration, combined channel zero calibration operation		
Auto Capture	After clearing the scale table, long press the ENT confirm key, take the current voltage value state obtained by the combination channel as the zero voltage, and execute the zero calibration scale.	
One Key In mV	For manual calibration of zero point, manually input the voltage of 4 decimal points at [modify voltage] as the zero point voltage for zero point calibration.	
Key In mV	Display the current voltage value of each channel, and manually input the voltage of 4 decimal points as the zero voltage to separate the zero point calibration of 4 channels.	
Weight calibration, combined channel weight calibration operation		
Weight CP 1	After the zero point calibration is completed, it automatically enters the weight calibration interface, and there are 5 calibration weight points, which support 5 calibration points.	
Weight CP 2		
Weight CP 3		
Weight CP 4	Take the standard point 1 as an example, load the weight on the weighing platform, and the voltage value of the interface will change at this time. After the weight is stable, press ENT key to complete the weight calibration. At this time, the process of calibration of the weight is completed. (Note: When the previous point is calibrated, the other weight points	
Weight CP 5		

		will be reset to the uncalibrated state (the default value is 10.0000mV, 10000kg). For example, after marking point 1 , mark points 2-5 are reset to 0)
Free weight calibration (Use T-CAL is ON, the following parameters are valid)		
Zero calibration: The zero calibration operation of the combined channel, the parameters and operation refer to the zero calibration of the above-mentioned weighted calibration scale.		
Use T-CAL: After the zero point calibration is completed, it automatically enters the interface of theoretical value calibration.		
LC mV/V	2.0000	Sensor true sensitivity, 4 decimal points, if multiple sensors is the average sensitivity
LC Capacity	10000	Sensor true range, if multiple sensors, is the sum of all sensor ranges
CAL Correct		
Correct Coef	1.00000	After calibration, if the zero point is correct, there is A deviation in weight, which can be used to correct the weight value. The calculation method of the value is: if the meter shows the weight is A , but the weight is B after weighing, the calculation method of the correction coefficient is : (actual weight B - current correction coefficient)/ the display weight A .
Angle Correct		
Correct Coef	1.00000	The Angle difference coefficient of the selected channel can be manually modified, that is, the Angle difference coefficient is displayed following 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 .
Correct Samp	//	Press ENT key to confirm the Angle difference sampling, follow the prompt steps for the corresponding operation (prompt whether to empty the scale, otherwise exit the Angle difference sampling, if yes, start the Angle difference sampling, select any Angle loading weight for pressure Angle, press confirm after stability, check the Angle difference coefficient will have a corresponding change after sampling). (Note: The amount of pressure Angle depends on the number of selected channels)
Correct Reset	//	Confirm that the Angle difference is reset and reset the

		Angle difference coefficient to the default value: 1.0000.
6. CAL Reset		
CAL Reset	//	Restore factory Settings on the calibration parameters, press the [ENT] confirm key to reset successfully.

6.2 Weight Calibration

The theoretical value effective switch under [Weight Param] can be set to **OFF** to enter the interface of weight calibration, otherwise the alarm prompt "Currently in weight-free calibration mode" will be displayed.

a) Zero calibration: zero calibration means zero calibration of the scale table.

There are two ways to calibrate zero: automatic acquisition and one-key manual input. When the new equipment or weighing structure is adjusted, the "automatic acquisition" method must be used for zero calibration.

Auto Capture:

Calibration success condition: the scale platform is stable.

The instrument interface displays the current millivolts, and displays the current corresponding millivolts of each channel number. After emptying the scale, long press **ENT** key, that is, the current state is calibrated to zero state.

Auto Proof	
WT:	0kg
1#	0.1288mV
2#	0.4838mV
3#	0.1288mV
4#	Channel closed
L-Press ENT Zero Cal	

One Key In mV:

Enter the voltage value of zero calibration at the modified voltage of the current interface, press ENT to complete the input, and then press ► to enter the weight calibration interface.

LC mV/V Zero	
Current V:	00.1033mV
Modified V:	+00.0000mV
Press ► to Wt Cal	

※ The value recorded by the data recorded when the weight is calibrated is used for manual input.

Key In mV:

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

Key In mV	
CH-1 :	+0.2388mV
CH-2:	+0.1288mV
CH-3:	+0.4838mV
CH-4:	+0.1288mV

b) Weight calibration:

Weight calibration means weight calibration with standard weights.

The instrument supports **5-point** calibration mode, which provides users with the maximum number of calibration points according to their needs.

Calibration method:

- ※ Before the weight calibration, the zero point calibration should be completed. After the zero point calibration is completed, the weight calibration interface will be automatically entered, as shown below. Take the standard point 1 as an example, and other standard point refer to the calibration 1 for calibration.

Wt Cal	
CP1	0.0000mV
CP2	0.0000mV
CP3	0.0000mV
CP4	0.0000mV
CP5	0.0000mV

Load the weights onto the scale table

Wt Cal	
CP1	0.2101mV
CP2	0.0000mV
CP3	0.0000mV
CP4	0.0000mV
CP5	0.0000mV

Press **ENT** Enter the weight value
to the weight

CP
000100

Weight Cal OK

Multi-point calibration attention:

- 1) User can choose the number of standard points, such as single point calibration, after the calibration completes the first weight point can exit.
- 2) Can not be calibrated across the point, otherwise appear "uncalibrated gain" alarm prompt. If the **3-point** calibration is used, it is necessary to calibrate the standard point

- 1, the standard point 2 and the standard point 3, but it is not possible to calibrate the standard point 3 and the standard point 4 after completing the **standard point 1**.
- 3) When the multi-point calibration, the weight weight needs to increase, such as the weight of the weight of the standard point 2 must be greater than the weight of the standard point 1, otherwise the alarm of "weight input error" will appear.

6.3 Free weight calibration

The theoretical value effective switch under [Weight Param] is set to **ON**, then you can enter the interface of weight calibration, otherwise the alarm prompt "Currently in CAL Weight mode" will be displayed.

a) Zero calibration

The zero point calibration process of free weights refers to the zero calibration instructions of the **weight calibration**.

b) Theory CAL

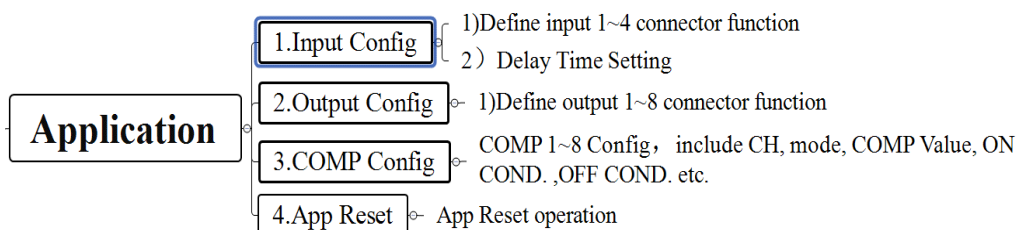
After the zero point calibration is completed, the theoretical value calibration interface is automatically entered, and the weight calibration operation can be carried out by inputting the sensor sensitivity and sensor range value.

Theoretical value calibration requires 2 steps:

- 1) Set load cell sensitivity (such as connecting multiple sensors, input the average sensitivity)
- 2) Set total range of the load cell (if connecting multiple sensors, enter the total sensor range)

Press the **ENT** key to complete the weigh-free calibration process.

Chapter 7 Application parameters



7.1 Input Config

Enter the port configuration parameters in the meter's application parameter entry. The instrument is equipped with **4** input interfaces and **8** output interfaces, which can meet the **IO function** of **4** in and **8** out.

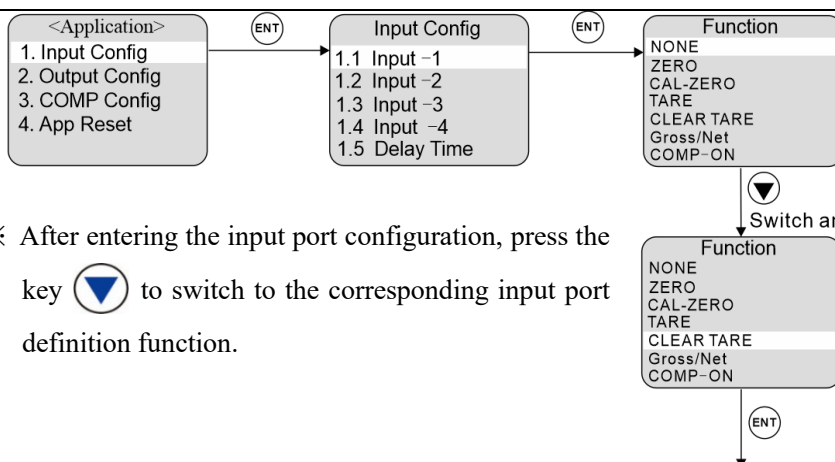
The input port **1~4** application function and shake off time can be set separately, the initial default has no function, customers can define themselves.

Parameter Items	Parameter content	Instructions
Input Config	Input 1~4 functions	Optional functions: NONE, ZERO, CAL-ZERO, TARE, CLEAR-TARE, GROSS/NET, COMP-ON; ※ Defined as no function, that is, the input port has no effect.
	Input 1~4 Delay time	Avoid misjudgment caused by signal jitter. Initial value: 5ms ; Range : 0-200ms

Input port function description:

Application function Meaning	
NONE	No input
ZERO	When the signal input is valid, the meter performs zero clearing.
CAL-ZERO	When the signal input is valid, the instrument performs zero calibration.
TARE	When the signal input is valid, the peeling function is performed.
CLEAR-TARE	When the signal input is effective, the skin cleaning function is performed, that is, the removed tare weight is restored.
GROSS/NET	When the signal input is valid, the gross net weight is switched.
COMP-ON	The function is defined, whether the output of the comparison point is controlled by the state 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.

Example: Define Input2 as CLEAR-TARE



※ After entering the input port configuration, press the key  to switch to the corresponding input port definition function.

7.2 Output config

The output port configuration parameter is applied to the parameter item of the meter. The function of output port 1-8 can be set, the initial default has no function, and the customer can define it.

Parameter Items	Parameter content	Instructions
Output Config	Output 1-8 function	Optional functions: NONE, COMP1-8, STAB, ZERO, NET, -SIGN; ※ Defined as no function means that the output outlet has no effect.

Output function description

Application Function Meaning	
NONE	No output
COMP1-8	When the comparator condition 1-8 is fulfilled, there is an 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 meter stability marker bit has an output.
ZERO	Instrument zero indicator is valid when there is an output.
NET	The output is valid when the meter is at net weight.
-SIGN	There is output when the displayed weight is less than 0.

7.3 Comparator configuration

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

GMT-X4 has 8 comparator functions, respectively 3.1-3.8 parameter items, each comparator parameter Settings in the following table, taking comparator 1 as an example.

Parameter content	Instructions
COMP Mode	Weight judgment: OFF; W<=CV1; W=CV1; W!=CV1; W>=CV1; CV1<=W<=CV2; W

	<[CV1,CV2]>W ※ If the current weight status is net weight, the weight is net weight; If it is gross weight, then this weight is gross weight
COMP Value-1	Higher priority comparison value, which is used by default when there is only one comparison parameter. Initial value: 0 ; Range: -999999-999999 . (Press the up and down arrow to switch signs)
COMP Value-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 signs)
ON COND.	When the comparison is successful, the meter outputs effective additional restrictions. Initial value: output immediately; Optional: 1 , immediate output (as long as the comparison conditions are established immediately output); 2 , output after the weight is stable (when the comparison condition is established and the current weight is stable only output); Delay mode (output after the success time exceeds the decision time).
TRUE JudgeT	Minimum judgment time for success. Initial value: 1000ms ; Range: 0 to 50000ms .
OFF COND.	An additional restriction that the meter outputs is invalid after the comparison changes from success to failure; Initial value: output immediately; Optional: immediate output, output after the weight is stabilized, delay mode (invalid after the failure time exceeds the failure determination time)
FALSE HoldT	Minimum time to determine failure. Initial value: 1000ms ; Range: 0 to 50000ms .

7.4 Application Examples

Example 1: Output 1 is valid when the weight is $\geq 500g$ and stable; Output **1** is invalid when the condition is not met and stable.

Setting: 1) Output Config → Output -1 Set to: COMP 1

2) Compare mode set to: **W $\geq$ CV1**

3) COMP Value-1 Set to: **500**.

4) COMP Value-2 is set to: **0** (single point comparison, this parameter is meaningless).

5) ON COND. set to: Stable ,output after the weight is stable.

6) TRUE JudgeT: **0** (non-delay mode, this parameter is meaningless).

7) OFF COND. set to: Stable, invalid after the weight is stable

8) FALSE HoldT: **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 effective state.

Example 2: The weight is not between 200g and 500g, the output 4 is effective after **5ms** delay, if the condition is not met, the output 4 is invalid after **5ms** delay.

Setting: 1) Output Config → Output -4 Set to: COMP 1

- 2) Compare mode set to: **W <[CV1,CV2]>W**.
- 3) COMP Value-1 Set to: **200**.
- 4) COMP Value-2 is set to: **500** (this setting value should be greater than comparison value 1).
- 5) ON COND. set to: delay output.
- 6) TRUE JudgeT: **5ms**.
- 7) OFF COND. set to: delay output.
- 8) FALSE HoldT: **5ms**.

Example 3: If the input switching quantity is set to **COMP-ON** function and the weight is between 200g and 300g, the immediate output is effective. If the conditions are not met, the immediate output is invalid.

Setting:

- 1) Switching quantity input port **IN1** is set to: Enable comparison point.
- 2) Output Config → Output -1 Set to: **COMP 1**
- 3) Compare mode set to: **CV1<=W<=CV2**.
- 4) COMP Value-1 is set to: **200**.
- 5) COMP Value-2 is set to: **300** (this item set value should be greater than compare value 1).
- 6) ON COND. set to: Output immediately.
- 7) TRUE JudgeT: **0ms** (non-delay mode, this parameter is meaningless).
- 8) OFF COND. set to: Output immediately.
- 9) FALSE HoldT: **0ms** (non-delay mode, this parameter is meaningless).

If the weight is between **200 and 300g**, although the comparison condition is met, the comparator will not output immediately until the input of the enable comparison point is effective; If the conditions are not met, the output will be invalid immediately.

Chapter 8 Simulated quantity parameters

The GMT-X4 combination mode supports 1 analog output, that is, 1 analog output of the corresponding channel. For the analog port connection, [refer](#) to [Chapter 3.7](#). Analog parameters correspond to the following:

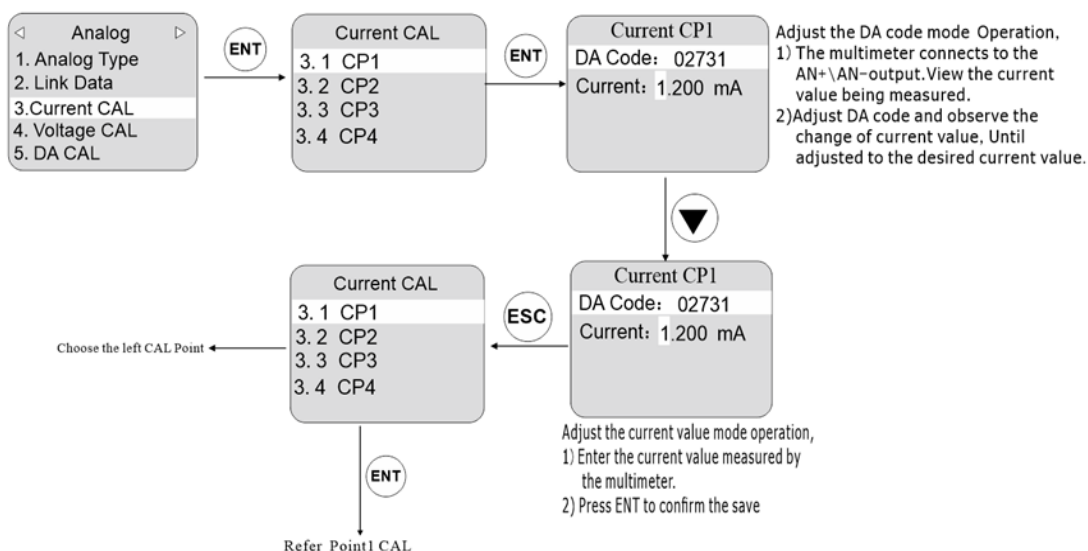
8.1 Description of analog parameters

Parameters	Initial values	
1. Analog Type	4-20mA	Range: 0-5V, 0-10V, 4-20mA, 0-20mA, 0-24mA, -5-5V, -10-10V. Select the negative analog output mode, and the analog sensor voltage can display negative numbers.
2. Link Data	Weight	Range: Weight, Net, Gross. Analog correspond to the weight form
3.Current CAL	Detail operation refer to 8.2 analog calibration	
4. Voltage CAL		
5. DA Reset	/	Restore the current analog parameters to their factory Settings

8.2 Calibration of analog quantity

Analog output mode optional current/voltage, normal display state,press key to view the corresponding analog output value. The format is **x.xxxx**mA/V.

The instrument has been calibrated for the analog output at the factory, and the user does not need to calibrate the analog output. If the analog output of the instrument is abnormal, the user can calibrate the analog output by himself. Current and voltage are calibrated in the same way. The calibration method here takes the current calibration of channel 1 as an example. The current calibration process is as follows (it is recommended to calibrate under the guidance of professional personnel) :



- 1) Switch to **【Analog】** under the **【3.Current CAL】** parameter.

2) The Analog current calibration can be carried out by adjusting the DA code and adjusting the current value. You can choose any one for analog calibration. Taking the current calibration point 1 as an example, the method is as follows:

i) Adjust **DA** code mode: Multimeter connected to analog output interface, measure the current output value. The current value changes with the DA code. In the **DA** code input line, adjust the DA code and observe the current value of the multimeter until it is adjusted to the required current value, that is, the calibration is complete.

ii) Adjusting the current value method:: View the current measurement value of the multimeter, continue to press **ENT** key in the **DA** code input interface, modify the current output value and the measurement value of the multimeter is consistent, that is, the calibration is complete. The rest of the point calibration refer to the first point.

3) Current calibration supports **5** point calibration. Customers adjust the calibration as required.

Chapter 9 Communication parameters

GMT-X4 has rich communication function interface: **COM-1 (RS485)**, **COM-2(RS232)**, common network port (supporting **TCP-IP** communication protocol), **CAN** communication interface (supporting **CAN** communication) and bus interface (supporting **Profinet**, **EthernetIP**, **EtherCAT** and **CCLink IE Field Basic** bus communication protocol).

9.1 Communication Parameters

Parameter Items		Initial value	Instructions
COMx (x=1/2) Serial port parameters			
COMx ID		01	Range: 01-99
Baudrate		38400	Range: 4,800, 9,600, 19,200, 38400, 57600, 115,200
Protocol		Modbus RTU	Range: Modbus RTU, GM-Cont.
Data Format		8-E-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 (Hi low) ,CD-AB (Low Hi)
Send Gap		20ms	The time interval between frames under the continuous send protocol. Range 0-5000ms, default: 20ms
CAN OPEN parameters			
CAN ID		01	Range: 1-127
Baudrate		250K	Range: 100K, 125K, 250K, 500K, 1000K
Report Type	Extended Frames		Optional: Standard frame, Extended frame Transfer data in the selected frame format.
Report Content	Weight		Optional: Weight, Voltage
Report Gap		20ms	Range: 0-5000ms
TCP-IP parameters			
IP		192.168.000.101	Range: 000.000.000.000-255.255.255.255
Subnet mask		255.255.255.000	Range: 000.000.000.000-255.255.255.255
Gateway		192.168.000.001	Range: 000.000.000.000-255.255.255.255
Connect1	Port	502	Range: 1-65535, network communication port number setting, 0 indicates closing this connection
	Protocol	Modbus/TCP	This parameter can be set for standard network ports. The value can be: Modbus/TCP, GM-Cont/TCP
	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
Connect2~connect 6		Socket No. defaule value is 0, other parameter refer connect 1's communicate parameter	
Profinet/ EthernetIP/CCLink IEF Basic parameters			
IP		192.168.000.101	The value ranges from 0.0.0.0 to 255.255.255.255
Write Switch		OFF	Range: OFF, ON; (When choose PN/EIP/CCLink IEF Basicattached plate,this parameter can see)

		ON: PN/EIP/CCLink IEF Basic communicate, transmitter parameter is control by main site“module parameter”, when transmitter power on main site“module parameter” setting parameter auto write in. OFF: PN/EIP/CCLink IEF Basic communicate, transmitter parameter not control by main site”module parameter”
Data Type	Float weight	PLC display type choose switch. Range: Int weight, Float weight, Float Voltage,AD Code.
EtherCAT parameters		
Write switch	OFF	Optional: Off, on. Acyclic parameters can be written only after they are enabled.
Site alias	0	Range: 0-65535
Communication parameters reset		
This parameter is used to restore the communication parameter to the factory setting. To reset the communication parameter, you need to enter the calibration/reset password. The default value is 000000. The password can be changed through the parameter of 【Maintenance】 -- 【PWD Protect】 -- 【CAL/RST PWD】		

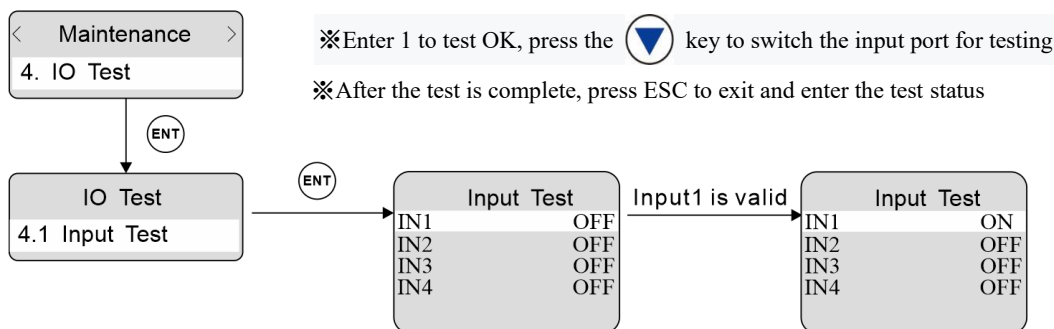
Chapter 10 Maintenance Parameters

Parameters		Instructions
1.Mode		This parameter is not enabled.
2.Language		System language selection, default: Chinese; Chinese and English are optional.
3.System Info		Check the system software version, MAC address, serial number.
4.IO Test		Perform a hardware test on the IO port . For details, see 10.1 IO Test .
5.COM Test		Serial port testing function detects the status of the serial port connection. For details, see 10.2 Serial Port Test .
6.ScreenSite	6.1ScreenSleep	Set screen off time. Default: 600s,Range: 0~3600s。Set to 0 means no off time.
	6.2ScreenTest	When the screen is white and all indicators are on,the screen is normal.
7.Edit Logo		Edit Logo,support 8 character,only support digit,English letters and blank,"-","_",long press the up button change case,edit are protected by passwords.
8.PWD Protect	8.1PWD Param	8.1.1PWD Switch: When turn on PWD Switch,edit Param need to enter PWD 8.1.2PWD Edit: can edit Param PWD.
	8.2CAL/RST PWD	This parameter can be modified to enter the calibration parameters and reset PWD.
9.Remote Edit		Whether you need to enable remote editing for each parameter, set it to on. You can remotely operate the corresponding parameter through communication
10.Reset Factory		This item restores system maintenance parameters to their factory Settings.

10.1 I/O Testing

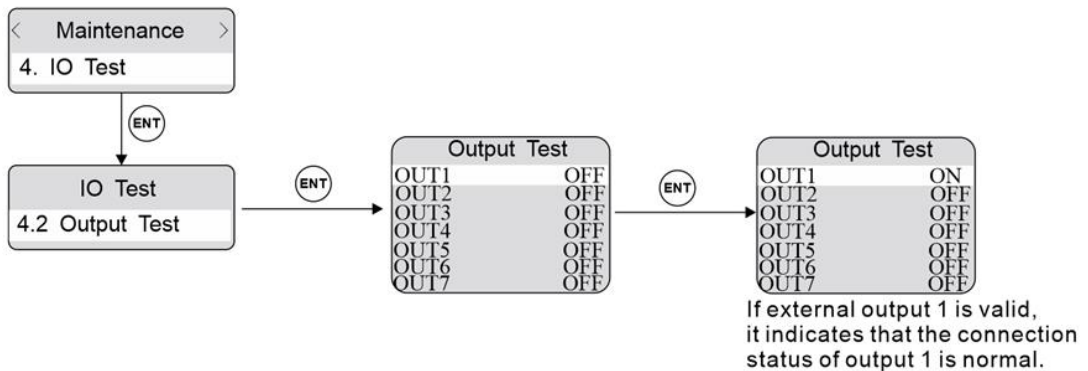
The I/O test is used to test whether the I/O connection status is normal.

Input test:



Output test:

- ※Under the test state of the output port, press ENT to switch the external output state.
- ※External state can be converted with ENT key switch, indicating that the output port is normally connected.
- ※After the test is complete, press ESC key to exit the output test state.



10.2 Serial Port 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 meter **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 meter, and the meter displays the following figure, it means that the **COM-485 connection is normal**, and the **232 serial port line is tested in the same way**.

COM-485: 01A
COM-232:

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 meter

Function code	Name	Instructions
03	Read registers	Read up to 125 registers at a time
06	Write a single register	
16	Write multiple registers	This meter 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 meter only supports the above **MODBUS** function codes, the meter will not respond when sending other function codes to the meter.

Exception Code response

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

11.1.2 Transmission mode

RTU

- (1) When communicating in RTU mode, every 8 bits (1 byte) in the data is divided into two 4-bit hexadecimal characters
- (2) Mark the end of a frame with an interval of more than 3.5 characters. For a more reliable end, you are advised to use an interval of at least 4.0 characters

The specific protocol is as follows:

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

8 data bits, 1 stop bit, odd check (8-O-1)

8 data bits, 1 stop bit, no checksum (8-n-1)

Code: Binary

11.1.3 Modbus Communication Address Table

When parameter [Mode] under [Maintenance] parameters is set to combination mode, the parameter corresponding to channel **1** takes effect, and the **modbus** address of the parameter of the other channel number only displays 0 and cannot be read and written (except

for the parameter of Angle difference correction). In combination mode, only the data of channel 1 can be read and written.

PLC address	Display address	Meaning	Instructions		
Weight status information parameters					
40001-40002	0000-0001	Current display resultant weight value (4 bytes signed integer)			
40003-40008	0002-0007	Reserve			
40009	0008	CH1 Weight status flag bit	position	Instructions	
			D15	Reserved	
			D14	Sensor power short (EXn+ and EXn- short)	
			D13	Reserved	
			D12	When there is a channel overflow or failure	
			D11	Calculate the weight using theoretical values	
			D10	ADC failure	
			D9	Currently showing net weight	
			D8	Millivolts stable	
			D7	Sensor negative overflow	
			D6	Sensor positive overflow	
			D5	Weight negative overflow	
			D4	Weight positive overflow	
			D3	Overflow state	
			D2	Show weight minus sign	
D1	Zero				
D0	Stable				
※ Indicates the weight status of the meter, when it is the current state, the status bit shows "1" If the current weight is zero and stable, the address D0D1 status bit is "1"					
40010-40012	0009-0011	Reserve			
40013-40014	0012-0013	CH1 Gross weight value (4 bytes of signed integer)			
40015-40016	0014-0015	CH1 Net weight value (4 bytes of signed integer)			
40017-40018	0016-0017	CH1 tare value (4 bytes signed integer number)			
40019-40036	0018-0035	Reserve			
40037-40038	0036-0037	CH1 Shows weight value (floating point type)			
40039-40040	0038-0039	CH11 Gross weight value (4 bytes signed floating point number)			
40041-40042	0040-0041	CH1 Net weight value (4 bytes signed floating point number)			
40043-40044	0042-0043	CH1 tare value (4 bytes signed floating point number)			
40045-40068	0044-0067	Reserve			
40069-40070	0068-0069	CH1 After filtering AD internal code	bipolar-direct data; polar-no direct data		
40071-40072	0070-0071	CH1 Sensor voltage value	direct data,integer,Four decimal point		
40073-40074	0072-0073	Voltage value of CH1 relative to zero	direct data,integer, Four decimal point		
40075-40092	0074-0091	Reserve			
40094	0093	Enter the status area	Bit	Instructions	
			D4-15	Reserve	
			D3	Input 4 state	
			D2	Input 3 state	
			D1	Input 2 state	

			D0	Input 1 state
40095	0094	Reserve		
40096	0095	Output Status area	position	Instructions
			D8-15	Reserve
			D7	Output 8 status
			D6	Output 7 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
40097	0096	Process status flag bit	D10-15	Reserved
			D9	IO test state
			D8	Reserve
			D7	COMP 8 ON
			D6	COMP 7 ON
			D5	COMP 6 ON
			D4	COMP 5 ON
			D3	COMP 4 ON
			D2	COMP 3 ON
			D1	COMP 2 ON
			D0	COMP 1 ON
40098	0097	Combination Channel Weight status flag bit ※ Indicates the weight status of the meter When it is the current status, the status bit displays "1" If the current weight is zero and stable, the address D0D1 status bit is "1"	D15	Reserved
			D14	Sensor power short (EXn+ and EXn- short)
			D13	Tank tilt
			D12	When there is a channel overflow or failure
			D11	Calculate the weight using theoretical values
			D10	ADC failure
			D9	Currently showing net weight
			D8	Millivolts stable
			D7	Sensor negative overflow
			D6	Sensor positive overflow
			D5	Weight negative overflow
			D4	Weight positive overflow
			D3	Overflow state
			D2	Show weight minus sign
			D1	Zero
			D0	Stable
40099-40100	0098-0099	Pressure value of channel 1	Signed number, integer, four decimal points	
40101-40102	0100-0101	Channel 2 pressure value		
40103-40104	0102-0103	Channel 3 pressure value		
40105-40106	0104-0105	Channel 4 pressure value		
40107-40108	0106-0107	Combined channel currently display weight value (4 bytes signed integer number)		

40109-40110	0108-0109	Combined channel gross weight (4-byte signed integer)		
40111-40112	0110-0111	Combined channel net weight value (4 bytes of signed integer)		
40113-40114	0112-0113	Combined channel tare value (4 bytes signed integer number)		
40115-40116	0114-0115	Combination channel display weight value (floating-point type)		
40117-40118	0116-0117	Combined channel gross weight value (4 bytes signed floating point number)		
40119-40120	0118-0119	Combined channel net weight value (4 bytes signed floating point number)		
40121-40122	0120-0121	Combined channel tare value (4 bytes signed floating point number)		
40123-40124	0122-0123	Code in AD after combination channel filtering	Bipolar - signed number; Unipolar - unsigned number	
40125-40126	0124-0125	Combined channel sensor voltage values	Signed number, integer, four decimal points	
40127-40128	0126-0127	Combined channel relative zero voltage value	Signed number, integer, four decimal points	
40129 ~ 40140	0128 ~ 0139	Reserve		
40141	0140	Error Code 1	D14-15	Reserved
			D13	Unstable at calibration, waiting to stabilize
			D12	Remote calibration when prohibited
			D11	Reserved
			D10	The previous weight point is not calibrated
			D9	Beyond minimum resolution
			D8	Weight input exceeds maximum range
			D7	Weight input cannot be zero
			D6	Weight calibration less than zero or the previous marking point
			D5	Weight calibration with positive sensor overflow
			D4	Sensor negative overflow during weight calibration
			D3	Unstable weight calibration
			D2	Sensor positive overflow at zero calibration
			D1	Sensor negative overflow during zero calibration
40142	0141	Error Code 2	D0	Zero point calibration is unstable
			D15	1 when calibration fails
			D14	Reserved
			D13	Remote tare operation Allow switch is not enabled when remote tare operation is performed
			D12	The net weight status does not allow peeling
			D11	Weight negative when peeled
			D10	The sensor is overflowing when peeling
	D9	Negative sensor overflow when peeling		

			D8	Unstable when peeling
			D7	Net weight status does not allow clearing to zero
			D6	The remote clear switch is not turned on during remote Clear
			D5	Positive sensor overflow when clearing
			D4	Negative sensor overflow on clear
			D3	Unstable when clearing
			D2	Clear out of range
			D1	Unstable on power-on clear
			D0	Power-on Clear out of range
40144 ~ 40200	0143 ~ 0199	Reserve		
Basic parameter area, readable and writable				
40201-40202	0200-0201	PWR-On Zero Range	Full scale 0%-101% , Initial value: 0 (OFF), 0 : OFF power on AUTO ZERO function 1-100 : power on according full scale 1-100% Range process ZERO 101 : Recover to last ZERO before power off	
40203-40204	0202-0203	Remote Zero	Range: 0 (OFF), 1 (ON); Initial value: 1 (ON)	
40205-40206	0204-0205	Zero range	Full scale 1%-99% , Initial value: 20%	
40207-40208	0206-0207	Remote Tare	Range: 0 (OFF), 1 (ON); Initial value: 1 (ON)	
40209-40210	0208-0209	Tare Record	Range: 0 (OFF), 1 (ON); Initial value: 0 (OFF)	
40211-40212	0210-0211	NetSign COR	Range: 0 (Disable), 1 (CorrectTare), 2 (BackToGross); Initial value: 0 (OFF)	
40213-40214	0212-0213	Preset Tare	Range: 0 ~ full scale Initial value: 0 , write in tare, read out current tare	
40215-40216	0214-0215	STAB Range	Range: 0-99d , Initial value: 1	
40217-40218	0216-0217	STAB Timer	Range: 1-5000 msec, Initial value: 1000	
40219-40220	0218-0219	TrZero Range	Range: 0-99d , Initial value: 0	
40221-40222	0220-0221	TrZero Timer	Range: 1-5000 msec, Initial value: 1000	
40223-40224	0222-0223	Digit-Filter	Range: 0-9 , Initial value: 4	
40225-40226	0224-0225	Adv. Filter	Range: 0-99d , Initial value: 0	
40227-40228	0226-0227	AD Sample Rate	Range: 0-9 (0-50 ; 1-60 ; 2-100 ; 3-120 ; 4-200 ; 5-240 ; 6-400 ; 7-480 ; 8-800 ; 9-960) Initial value: 4-200	
40229-40230	0228-0229	Signal Range	Range: 0-5 (corresponds to 0:0-5mV ; 1:0-10mV ; 2:0-15mV ; 3:-5-5mV ; 4:-10-10mV ; 5:-15-15mV) Initial value: 1 (0-10mV)	
40231 ~ 40600	0230 ~ 0599	Reserve		
Demarcated parameter area, readable and writable				
40601-40602	0600-0601	Unit	Range: 0-3 ; 0-t , 1-kg , 2-g , 3-lb ; Initial value: 1	
40603-40604	0602-0603	Decimal Point	Range: 0-4 ; 0-0 , 1-00 , 2-000 , 3-0000 , 4-00000 ; Initial value: 0	
40605-40606	0604-0605	Division	Range: 1,2,5,10,20,50	
40607-40608	0606-0607	Full Scale	Range: 0 - index value * 1000000 , initial value: 10000	
40609-40610	0608-0609	AUTO ZERO CAL	Write only 1 ; Write 1 to zero calibrate the current state	

			Read: Current millivolts of the sensor Fix 4 decimal points
40611-40612	0610-0611	KEY ZERO CAL	Range: 0-150000 ; Write millivolts; Read as the current zero voltage
40613-40614	0612-0613	CP1	Write weight value to the calibration weight point 1 calibration
40615-40616	0614-0615	CP2	Write the weight value to the calibration weight point 2 calibration
40617-40618	0616-0617	CP3	Write the weight value to the calibration weight point 3 calibration
40619-40620	0618-0619	CP4	Write the weight value to the calibration weight point 4 calibration
40621-40622	0620-0621	CP5	Write the weight value to the calibration weight point 5 calibration
40623-40624	0622-0623	LC mV/V	Write the actual sensitivity of the sensor for theoretical value calibration, range: 00000-39999 , default: 20000
40625-40626	0624-0625	LC Capacity	Write the total sensor range for the theoretical value calibration, range: 0-999999 , default: 10000
40627-40628	0626-0627	Use T-CAL	Write 1 to enable theoretical calibration, write 0 to use calibration data
40629-40630	0628-0629	Correct Coef	Write coefficient to calibrate the correction, write data integer, the system default data write data with 5 decimal points Range: 000001-999999 , default: 100000
40631-40632	0630-0631	Angle Correct Coef 1	Default: 100000, readable and writable
40633-40634	0632-0633	Angle Correct Coef 2	Default: 100000, readable and writable
40635-40636	0634-0635	Angle Correct Coef 3	Default: 100000, readable and writable
40637-40638	0636-0637	Angle Correct Coef 4	Default: 100000, readable and writable
40639-40640	0638-0639	Angle difference calculation	Range: 1; Can be calculated only when the number of samples is equal to the total number of combined channels, can only be written
40641-40642	0640-0641	Angle Correct Samp	Write 1 Angle difference sample once, only writable
40643-40644	0642-0643	Angle Correct Reset	Write 1 Angle difference coefficient is reset to the initial value of 100000, writable only
40647-40648	0646-0647	Auto Capture	Input 1 for four channels of automatic zero calibration, zero calibration can not pass each way in the double-word address 650 prompts; Read as the current voltage value
40649-40650	0648-0649	One Key In mV	Range: 0-150000 ; Write millivolts, which are used in four channels at the same time; Read as zero voltage value
40651-40652	0650-0651	Key In mV	The channel error number used to return one-key automatic zero calibration, no error returns 1, the flag bit clears after two seconds; If there are errors in channel 1 and channel 3, return:

			0X0F0F, and the flag bit clears after two seconds
40653-40654	0652-0653	Tilt	Initial value: 0 (no alarm), range: 0-999999; When the weight gap between the two corners reaches this threshold, the feeding tilt alarm is carried out;
40655 ~ 40700	0654 ~ 0699	Reserve	
Apply parameter area, read and write, otherwise read only			
41001-41002	1000-1001	input1 function	Default: 0 Parameter range: 0- NONE, 1- ZERO, 2- CAL-ZERO, 3- TARE, 4- CLEAR TARE, 5- GROSS/NET, 6- COMP-ON
41003-41004	1002-1003	Input 1 delay	Parameter range: 0-200ms, initial value: 5ms,
41005-41006	1004-1005	Input 2 function	Refer input1 function Specification
41007-41008	1006-1007	Input 2 delay	Refer input1 delay Specification
41009-41010	1008-1009	Input 3 function	Refer input1 function Specification
41011-41012	1010-1011	Input 3 delay	Refer input1 delay Specification
41013-41014	1012-1013	Input 4 function	Refer input1 function Specification
41015-41016	1014-1015	Input 4 delay	Refer input1 delay Specification
41017-41030	1016-1029	Reserve	
41031-41032	1030-1031	Output 1 function	Default: 0; Parameter ranges correspond to: 0- NONE, 1-8: COMP1-8, 9- STAB, 10- ZERO, 11- NET 12- -SIGN
41033-41034	1032-1033	Output 2 function	Refer to Output 1 function
41035-41036	1034-1035	Output 3 function	
41037-41038	1036-1037	Output 4 function	
41039-41040	1038-1039	Output 5 function	
41041-41042	1040-1041	Output 6 function	
41043-41044	1042-1043	Output 7 function	
41045-41046	1044-1045	Output 8 function	
41047 ~ 41062	1046 ~ 1061	Reserve	
41063-41064	1062-1063	COMP 1-COMP Mode	Initial value: 1-weight ≤; Range: 0-6,0-OFF;1-W≤CV1;2-W=CV1;3-W!=CV1;4-W>=CV1;5-CV1≤W≤CV2; 6-W<[CV1,CV2]>W
41065-41066	1064-1065	COMP 1-COMP Value-1	Initial value: 0; COMP value1, direct data,Range-999999-999999
41067-41068	1066-1067	COMP 1-COMP Value-2	Initial value: 0; COMP value2, direct data,Range-999999-999999, > COMP value 1;
41069-41070	1068-1069	COMP1-ON COND.	Initial value: 0- output; Range: 0-2, : 0- Immediately, 1-Stable,2-Debounce;
41071-41072	1070-1071	COMP1-TRUE JudgeT	Minimum judgment time for success, Initial value: 1000ms, Range: 0-50000ms;
41073-41074	1072-1073	COMP1- OFF COND.	Initial value: 0- outputinvalid, Range: 0-2, : 0- Immediately,1-Stable,2-Debounce;
41075-41076	1074-1075	COMP1-FALSE HoldT	Minimum decision time of failure, Initial value: 1000ms,Range0-50000ms;
41077-41092	1076-1091	COMP 2 parameter	Refer COMP1 parameters Specification
41093-41108	1092-1107	COMP 3 parameter	
41109-41124	1108-1123	COMP 4 parameter	
41125-41140	1124-1139	COMP 5 parameter	

41141-41156	1140-1155	COMP 6 parameter		
41157-41172	1156-1171	COMP 7 parameter		
41173-41188	1172-1187	COMP 8 parameter		
41189 ~ 41300	1188 ~ 1299	Reserve		
The following are combined mode parameters				
42001-42002	2000-2001	Current display resultant weight value (4 bytes signed integer)		
42003	2002	Resultant Status Flag ※ Indicates the weight status of the instrument When it is the current state, the status bit displays "1" If the current weight is zero and stable, the address D0D1 status bit is "1"	D15	Reserved
			D14	Sensor power short (EXn+ and EXn- short)
			D13	Tank tilt
			D12	When there is a channel overflow or failure
			D11	Calculate the weight using theoretical values
			D10	ADC failure
			D9	Currently showing net weight
			D8	Millivolts are stable
			D7	Sensor negative overflow
			D6	Sensor positive overflow
			D5	Weight negative overflow
			D4	Weight positive overflow
			D3	Overflow state
			D2	Show weight minus sign
			D1	Zero
			D0	stabilize
42004	2003	Channel 1 Weight status flag bit ※ Indicates the weight status of the meter When it is the current status, the status bit displays "1" If the current weight is zero and stable, the address D0D1 status bit is "1"	D15	Reserved
			D14	Sensor power short (EXn+ and EXn- short)
			D12~D13	Reserve
			D11	Calculate the weight using theoretical values
			D10	ADC failure
			D9	Currently showing net weight
			D8	Millivolts stable
			D7	Sensor negative overflow
			D6	Sensor positive overflow
			D5	Weight negative overflow
			D4	Weight positive overflow
			D3	Overflow state
			D2	Show weight minus sign
			D1	Reserve
			D0	Stable
42005	2004	CH2 Weight status flag bit	Refer to Channel 1 Weight Status Flag bit instructions	
42006	2005	CH3 Weight status flag bit		
42007	2006	CH4 Weight Status flag bit		
42008	2007	reserve		
42009-42010	2008-2009	CH1 Current display weight value (4 bytes signed integer number)		
42011-42012	2010-2011	CH2 Current display weight value (4 bytes signed integer number)		
42013-42014	2012-2013	CH3 Current display weight value (4 bytes signed integer number)		
42015-42016	2014-2015	CH4 Current display weight value (4 bytes signed integer number)		
42017-42018	2016-2017	CH1 Current display pressure value (4 bytes signed integer number)		
42019-42020	2018-2019	CH2 Current display pressure value (4 bytes signed integer)		
42021-42022	2020-2021	CH3 Current display pressure value (4 bytes signed integer)		

42023-42024	2022-2023	CH4 Current display pressure value (4-byte signed integer)	
42025-42026	2024-2025	CH1 Load cell voltage value	Signed number, integer, four decimal points
42027-42028	2026-2027	CH2 Load cell voltage values	Signed numbers, integers, four decimal points
42029-42030	2028-2029	CH3 Load cell voltage values	Signed number, integer, four decimal points
42031-42032	2030-2031	CH4 Load cell voltage values	Signed number, integer, four decimal points
42033-42034	2032-2033	CH1 Calibration zero voltage value	Range: Follow the sensor signal range; Write millivolts; Read as current zero voltage Write zero voltage, read as current zero voltage Signed number, integer, four decimal points
42035-42036	2034-2035	CH2 Calibration zero voltage value	Range: Follow the sensor signal range; Write millivolts; Read as current zero voltage Write zero voltage, read as current zero voltage Signed number, integer, four decimal points
42037-42038	2036-2037	CH3 Calibration zero voltage value	Range: Follow the sensor signal range; Write millivolts; Read as current zero voltage Write zero voltage, read as current zero voltage Signed number, integer, four decimal points
42039-42040	2038-2039	CH4 Calibration zero voltage value	Range: Follow the sensor signal range; Write millivolts; Read as current zero voltage Write zero voltage, read as current zero voltage Signed number, integer, four decimal points
42041-42042	2040-2041	CH1 sensor sensitivity value	Write using the actual sensitivity of the sensor for theoretical value calibration, range: 00000-39999 , default: 30000 Unsigned number, integer, four decimal points
42043-42044	2042-2043	CH2 sensor sensitivity value	Write using the actual sensitivity of the sensor for theoretical calibration, range: 00000-39999 , default: 30000 Unsigned number, integer, four decimal points
42045-42046	2044-2045	CH3 Sensor sensitivity value	Write using the actual sensitivity of the sensor for theoretical value calibration, range: 00000-39999 , default: 30000 Unsigned number, integer, four decimal points
42047-42048	2046-2047	CH4 sensor sensitivity value	Write using the actual sensitivity of the sensor for theoretical value calibration, range: 00000-39999 , default: 30000 Unsigned number, integer, four decimal points
42049-42050	2048-2049	CH1 Sensor range	Write sensor range for theoretical value calibration, range: 0-999999 , default: 10000 , unsigned integer
42051-42052	2050-2051	CH2 Sensor range	Write sensor range for theoretical value calibration, range: 0-999999 , default: 10000 , unsigned integer
42053-42054	2052-2053	CH3 Sensor range	Write sensor range for theoretical value calibration, range: 0-999999 , default: 10000 , unsigned integer
42055-42056	2054-2055	CH4 Sensor range	Write sensor range for theoretical value calibration, range: 0-999999 , default: 10000 ,

			unsigned integer
42057-42058	2056-2057	Angle Correct Coef 1	Default: 100000; read-write
42059-42060	2058-2059	Angle Correct Coef 2	Default value: 100000 read-write
42061-42062	2060-2061	Angle Correct Coef 3	Default: 100000; read-write
42063-42064	2062-2063	Angle Correct Coef 4	Default: 100000; read-write
42065-42066	2064-2065	Angle difference calculation	After sampling the Angle difference, write 1 for the Angle difference calculation; Only when the number of samples is equal to the total number of combined channels can be calculated, only write; Read as 0
42067-42068	2066-2067	Angle Correct Samp	Press the material to one of the sensors, write 1 Angle difference sampling once after stability, and then change the material to another sensor, write 1 again after stability And so on, finish sampling the selected sensor
42069-42070	2068-2069	Angle Correct Reset	Write 1 The Angle difference coefficient is reset to the initial value of 100000, which can only be written and read as 0
42071-42072	2070-2071	Angle difference sampling times	Readable, write 0 Clear the number of angular difference samples, read as the number of combined channels
42073-42074	2072-2073	Auto Capture	Enter 1 for 4-channel automatic zero calibration
42075-42076	2074-2075	One Key In mV	Unit: 0-150000; Write millivolts, which use the selected channel at the same time
42077-42078	2076-2077	Zero calibration return value	The channel error number used to return the one-key zero calibration 1 is returned without errors, or 0X0F0F if there are errors in channels 1 and 3 The flag bit clears after two seconds
42079-42080	2078-2079	Tilt	When the weight difference between the two corners reaches this threshold, the feed tilt alarm is carried out, ranging from 0-999999, default: 0
Communication parameter setting area, can read and write, otherwise read only			
RS485 parameters			
48001	8000	COM ID	Initial value: 1; Range: 01-99
48002	8001	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	Protocol	Initial value: 0-Modbus RTU, range: 0-Modbus RTU, 1-GM-Cont
48004	8003	Data Format	Initial value: 1 (8E1) ; Range: 0-8N1, 1-8E1, 2-8O1, 3-7E1, 4-7O1 Note: modbus only supports 8-bit data bits
48005	8004	Dword Format	Initial value : 0 (AB-CD) Range: 0-ab-cd, 1-CD-AB
48006	8005	Send Gap	The time interval between frames when sending consecutively Initial value: 20ms , range 0-5000ms
48007 ~ 48020	8006 ~ 8019	Reserve	

RS232 parameters			
48021	8020	COM ID	Refer to S485 parameters
48022	8021	Baudrate	
48023	8022	Protocol	
48024	8023	Data Format	
48025	8024	Dword Format	
48026	8025	Send Gap	
48027 ~ 48040	8026 ~ 8039	Reserve	
CAN OPEN communication parameters			
48041	8040	COM ID	Initial value: 1; range: 1-127
48042	8041	Baudrate	Range: 0-50K, 1-100K, 2-125K, 3-250K, 4-500K
48043	8042	Report frame format	Initial value: 1; range: 0-standard frame(11bit), 1-extension frame (29bit) (only used for actively report frame)
48044	8043	Report frame content	Initial value: 0; range: 0-weight,1-volt
48045	8044	Report gap	Initial value: 20ms; range:0-5000ms
48046 ~ 48100	8045 ~ 8099	Reserve	
Network port communication parameters			
48101-48104	8100-8103	IP1-IP4	Initial value: 192168000001 , the sequence is the first to the fourth part IP ; Range: 000000000000-255255255255
48105-48108	8104-8107	subnet mask 1- 4	Initial value: 255255255001 , in order of the first to fourth part IP ; Range: 000000000000-255255255255
48109-48112	8108-8111	Gateway 1- 4	Initial value: 192168000001 , in order of the first to the fourth part IP ; Range: 000000000000-255255255255
48113	8112	connect 1 Port	Initial value: 502 , range: 1-65535, network communication port number Settings, 0 indicates that the connection is closed
48114	8113	connect 1 Protocol	For standard network ports, the value can be: 0-Modbus /TCP, 1-GM-Cont/TCP, 0-Modbus/TCP by default
48115	8114	connect 1 Dword Format	Can be set when standard network port, high and low byte mode, Modbus/RTU use 0-AB-CD, 1-CD-AB , default: 0-AB-CD
48116	8115	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
48117-48120	8116-8119	connect 2	In addition to the initial value of the port number is 0 , the rest of the reference connection port 1 that is, register address 8112-8115 parameter description
48121-48124	8120-8123	connect 3	
48125-48128	8124-8127	connect 4	
48129-48130	8128-8131	connect 5	
48131-48136	8132-8135	connect 6	
48137	8136	PN/EIP/ CC-Link IE Field Basic write switch	Initial value: 0- Disable ; Range: 0- Off, 1- On
48138	8137	PN/EIP/ CC-Link IE	Initial value: 1- floating point weight; Range: 0- integer

		Field Basic data type	weight 1- floating point weight 2- floating point voltage 3-AD code
48139	8138	EtherCAT Site alias	Initial value: 0; Range: 0-65535
48140 ~ 48300	8139 ~ 8299	Reserve	
I/O test parameters that can be read and written, otherwise read-only			
48301	8300	Test Mode	Parameter range: 0-1, 0: exit the I/O test mode, 1: enter the serial port IO test mode, after the test must be closed, the instrument can enter the normal state
48302	8301	Enter 1 Test	Reading 0 indicates no input and reading 1 indicates there is input Writing any value is invalid and only works in IO test mode
48303	8302	Enter 2 Test	
48304	8303	Input 3 Test	
48305	8304	Input 4 Test	
48306 ~ 48350	8305 ~ 8349	Reserve	
48351	8350	Output 1 Test	Range: 0-1, write: 0: output off, 1: output on (valid only in I/O test mode), read: current I/O port status, 0: off, 1: on
48352	8351	Output 2 Test	
48353	8352	Output 3 Test	
48354	8353	Output 4 Test	
48355	8354	Output 5 Test	
48356	8355	Output 6 Test	
48357	8356	Output 7 Test	
48358	8357	Output 8 Test	
48359 ~ 48400	8358 ~ 8399	Reserve	
Analog calibration area address, read and write			
48401	8400	Analog output mode	Default: 2; Range: 0:0-5V, 1:0-10V, 2:4-20mA, 3:0-20mA, 4:0-24mA, 5:-5-5V, 6:-10-10V
48402 ~ 48405	8401 ~ 8404	Reserve	
48406	8405	Analog Link Data	Range: 0-2, 0: current weight, 1: net weight, 2: gross weight
48407	8406	Enter analog calibration mode	Range: 0-2, write: 0, exit the remote analog calibration state; 1: remote current calibration; 2: remote voltage calibration Remote editing can only be used after it is turned on
48408	8407	mA Point1 Digital Code	Range: 0-65535, write: The meter outputs the current according to the write code Available only in current calibration mode
48409	8408	mA Point1 mA value	
48410	8409	mA Point2 Digital Code	
48411	8410	mA Point2 mA value	
48412	8411	mA Point3 Digital Code	
48413	8412	mA Point3 mA value	
48414	8413	mA Point4 Digital Code	
48415	8414	mA Point4mA value	
48416	8415	mA Point5 Digital Code	Range: 0-24000, write the measured current value, complete the current calibration of the corresponding point Available only in current calibration mode
48417	8416	mA Point5 mA value	
48418	8417	mV Point 1 Digital Code	
48419	8418	mV Point 1 mV value	
48420	8419	mV Point Digital Code	
48421	8420	mV Point 2 mV value	

48422	8421	mV Point 3 Digital Code	value, complete the voltage calibration of the corresponding point Available only in voltage calibration mode
48423	8422	mV Point 3 mV value	
48424	8423	mV Point 4 Digital Code	
48425	8424	mV Point 4 mV value	
48426	8425	mV Point 5 Digital Code	
48427	8426	mV Point 5 mV value	Channel 1 Currently outputs analog
48428	8427	current output analog	
48429 ~ 48800	8428 ~ 8799	Reserve	
Function Operation class address area (corresponding to coil function), can be read and written			
48801	8800	ZERO	Write 1 Perform the action Read all zeros
48802	8801	TARE	
48803	8802	Clear Tare	
48804	8803	GROSS/NET	
48805	8804	CAL ZERO	
48806 ~ 48900	8805 ~ 8899	Reserve	
The system parameters are reset			
48901	8900	Basic reset	Write 1 Perform the corresponding reset Read all zeros
48902	8901	CAL reset	
48903	8902	Analog reset	
48904 ~ 48940	8903 ~ 8939	Reserve	
48941	8940	Application reset	Write 1 Perform the corresponding reset Read all:0
48942	8941	Communication reset	
48943	8942	All Parameters reset	
48943 ~ 48980	8943 ~ 8979	Reserve	
Power on Logo edit zero, can read/write			
48981-48988	8980-8987	Edit power on logo character 1-8 (8 character)	Correspond to power on logo 1-8 character, need write in Ascii code, Range: 0-9,A-Z,a-z , blank space, '-'; default: WELCOME blank space
48989 ~49310	8988 ~ 9309	Reserve	
49311	09310	Channel combination	Default: 0x00FF ; Range: 0x00FF-0xFFFF (0x000F : Channel one, 0x00F0: Channel two, 0x0F00: Channel three, 0xF000: Channel four, for example, 0x0FFF indicates the combination of channel one + channel two + channel three)
Instrument System Information area, read only area			
410001	10000	Background software version (high word)	If read 10000 , version 010000
410002	10001	Background software version (low word)	
410003	10002	Compilation time (years)	
410004	10003	Compile time (month day)	
410005	10004	Language	0: Chinese; 1: English
410006-410018	10005-10017	transmitter serial No. 13 characters	
410019-410030	10018-10029	Transmitter 138 NO. 12 characters, indicate transmitter hardware version	
410031 ~	10030 ~	Reserve	

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410100	10099		
410101-410106	10100-10105	Transmitter MAC address	
410107 ~ 410207	10106-10206	Reserve	
Coil address			
Functional operation class			
0x0001	0000	ZERO	The contents are readable and writable coils Writing ON is valid Read as 0
0x0002	0001	TARE	
0x0003	0002	Clear Tare	
0x0004	0003	GROSS/NET	
0x0005	0004	CAL ZERO	
0x0006~0x0300	0005 ~ 0299	Reserve	
Reset operation class			
0x0301	0300	Basic reset	This area only writes Write ON to perform a reset Read 0
0x0302	0301	CAL reset	
0x0303	0302	Analog reset	
0x0304~0x0340	0303 ~ 0339	Reserve	
0x0341	0340	Application reset	This area only writes Write ON to perform a reset Read 0 (Note: partial parameter reset, except boot Logo)
0x0342	0341	Communication reset	
0x0343	0342	All Parameters reset	
0x0344~0x0400	0343-0399	Reserve	
IO status, read-only area			
0x0401	0400	Input 1 state	Read only area Read Return each input port status bit 0 : invalid; 1 valid
0x0402	0401	Input 2 state	
0x0403	0402	Input 3 state	
0x0404	0403	Input 4 state	
0x0405~0x0450	0404 ~ 0449	Reserved	
0x0451	0450	Output 1 state	Read only area Read Return each output status bit 0 : invalid; 1 valid
0x0452	0451	Output 2 state	
0x0453	0452	Output 3 state	
0x0454	0453	Output 4 state	
0x0455	0454	Output 5 state	
0x0456	0455	Output 6 state	
0x0457	0456	Output 7 state	
0x0458	0457	Output 8 state	
0x0459~0x0500	0458 ~ 0499	Reserve	
0x0501	0500	Basic Parameter Remote Edit	Read only parameter area, get whether remote editing is allowed, 1 enable, 0 disable
0x0502	0501	CAL Parameter Remote Edit	
0x0503	0502	Application Remote Edit	
0x0504	0503	Analog Parameter Remote Edit	
0x0505	0504	Communication Parameter remote edit	
0x0506	0505	Maintenance Remote Edit	
0x0507	0506	PWD Protect	

11.2 GM-Cont (Continuous Send Protocol)

GMT-X4 When serial port protocol is selected as **GM-Cont** (Network port protocol is selected as **GM-Cont/TCP**), data is continuously sent in the following format.

		CH1	CH2	CH3	CH4			
--	--	-----	-----	-----	-----	--	--	--

STX	Scale No.	State 1	State 2	Weight value	8 digits each, read all 0	CRC	CR	LF
02H	2-bit	1 bit	1 bit	6 bits		2-bit	0D	0A

Among:

Scale No.——2 bits, display current scale No., Range: 01~99;

state1——1 bit, format as below:

bit7	bit6	bit5	bit4		bit3	bit2		bit1	bit0
Fixed 0			t	0	0	0	0	0	0
			kg	0	1	0.0	0	0	1
			g	1	0	0.00	0	1	0
			lb	1	1	0.000	0	1	1
						0.0000	1	0	0
Units of weight						Decimal point			

Status 2-1 place in the following format:

bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
Reserve	Reserve	Reserve	GROSS/NET	+/-	ZERO	Overflow	STAB
Fixed 0	Fixed 1	Fixed 0	0-GROSS 1-NET	0-+ 1--	0-None ZERO 1-ZERO	0-normal 1- overflow	0-Un Stable 1- STAB

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

CRC -- 2 digits, checksum

All values before the check digit are added and converted to decimal data, and then the last two digits are converted to ASCII (the tens digit first, the ones digit after). For example If you have the following frame of data:

(02 30 31 00 41 20 20 20 37 30 30 09 51 20 20 20 32 30 30 12 4B 20 20 33 30 30 30 1B 4C 20 20 4F 46 4C 20) 31 39 0D 0A

Add the sum of 02 to 20:5EF (Hex) and convert to decimal 1519. Take the last two digits, from which it can be calculated that the data frame check code is 31, 39.

For example:

Current meter automatically returns data: **02 30 31 00 41 20 20 20 37 30 30 00 00 20 20 20 20 30 00 00 20 20 20 20 30 33 35 0D 0A**

The current instrument status: in gross weight, stable state, weight value is positive, the current weight value is 700t.

11.3 CAN OPEN communication protocol

1) Support 100K, 125K, 250K, 500K, 1000K bus speed, CAN be set in the communication parameters of the CAN OPEN parameter.

2) There are two different frame formats, mainly the length of the identifier field is different, containing 11 bits identifier (ID) for the standard frame, and containing 29 bits identifier for the extended frame. The frame format is as follows:

11.3.1 Standard frame actively report data format

CAN protocol standard frame mode		CAN data report frame	
11bits Frame ID	bit10	Address	Local device address (1~127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	10: Actively report the weight; 11. Actively report voltage
	bit2		
	bit1	Reserved (fixed 0)	
bit0			
Data format			
Word 3	Byte7	Weight data	32 bit integer signed number ， data Hi-Lo, OFL,-OFL display weight data is 9999999, -9999999
	Byte6		
Word 2	Byte5		
	Byte4		
Word 1	Byte3	Channel status	The following states are 1 when valid D7: ADC failure D6: Sensor short circuit D5: Sensor overflow D4: Weight overflow D3: Theoretical value in effect D2: Shows the net weight D1: Stable D0: zero
	Byte2	Channel number	The channel number of the current data frame is 0
Word 0	Byte1	Reserved	Fixed 0
	Byte0		

11.3.2 Standard Frame read data format

11bits Frame ID	bit10	Address	Target device address
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fixed to 01: Parameter read
	bit2		
	bit1	Frame direction	Fixed to 0: from host to slave

	bit0	Data type	0 : represents a single word (2byte); 1 : double word (4byte)
Data format			
Word 3	Byte7	0	
	Byte6		
Word 2	Byte5	0	
	Byte4		
Word 1	Byte3	0	
	Byte2		
Word 0	Byte1	Address to read	
	Byte0		

Data format to return the result after reading

11bits Frame ID	bit10	Address	Local device address (1 to 127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fixed to 01 : Parameter read
	bit2		
	bit1	Frame direction	The value is fixed to 1 : from the slave machine to the host
	bit0	Data type	0 : Indicates single word (2byte), 1 : double word (4byte)
Return data format			
Word 3	Byte7	Back to data	Read the low word portion of a double word or read a single word
	Byte6		
Word 2	Byte5		Read the high part of the double word
	Byte4		
Word 1	Byte3		Result: 0 succeeded, 1 The address is incorrect, and 2 the data is incorrect
	Byte2		
Word 0	Byte1		Address to read
	Byte0		

11.3.3 Standard Frame write data format

11bits Frame ID	bit10	Address	Target device address
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fixed to 00 : Parameter written
	bit2		

	bit1	Frame direction	Fixed to 0 : from host to slave
	bit0	Data type	0 : represents a single word (2byte); 1 : double word (4byte)
Data			
Word 3	Byte7	Parameter content to write	Write double word low word or single word content
	Byte6		
Word 2	Byte5		Write double word high word
	Byte4		
Word 1	Byte3		0
	Byte2		
Word 0	Byte1		Address to write to
	Byte0		

Data format to return the result after writing

11bits Frame ID	bit10	address	Local device address (1 to 127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fixed to 00 : Parameter written
	bit2		
	bit1	Frame direction	Fixed as 1 : from slave to host
	bit0	Data type	0 : represents a single word (2byte); 1 : double word (4byte)
Return data format			
Word 3	Byte7		Write double word low or single word content
	Byte6		
Single Word 2	Byte5		Write double word high word
	Byte4		
Single Word 1	Byte3		Action result: 0 successful, 1 address error, 2 data unreasonable
	Byte2		
Word 0	Byte1		Address to write to
	Byte0		

11.3.4 Extend Frame active reporting data format

CAN protocol extended frame mode	CAN data report frame		
29bits Frame ID	bit28	Address	Local device address (1 to 127)
	bit27		
	bit26		
	bit25		

	bit24		
	bit23		
	bit22		
	bit21	Frame Feature	10: Actively report the weight; 11. Actively report voltage
	bit20		
	bit19	Frame Direction	Fixed as 1: from machine to host
	bit18	Content to report	00: Report data channel 1
	bit17		
	bit16	Reserved	Fixed to 0
	bit15	Data state	The following status is 1 when valid bit15: ADC failure bit14: Sensor short circuit bit13: Sensor overflow bit12: Weight overflow bit11: Theoretical value in effect bit10: Shows the net weight bit9: Stable bit8: Zero
	bit14		
	bit13		
	bit12		
	bit11		
	bit10		
	bit9		
	bit8		
	bit0~bit7	Reserve	Fixed to 0
Data			
Word 0	Byte7	Weight data	The returned data is a hexadecimal number, a 32-bit integer signed number, the data is high before, and the weight data is 9999999 when the positive and negative overflow. -9999999; If it is a voltage value, the voltage value defaults to 3 decimal places
	Byte6		
Word 1	Byte5		
	Byte4		
Word 2 to Word 3	Byte0~Byte3	Reserve	Fixed to 0

11.4 PROFINET Communications

The GMT-X4 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 【Maintenance】Parameters -- 【System Info】.

11.4.1 I/O Status

GMT-X4 provides 36 byte INPUT, 16 byte OUTPUT, and the master station can read and control the state of the weigh display through these I/ OS.

11.4.1. PN Cycle parameter address of the I/O module

PN offset	EIP offset	Parameter	Data type	Parameter Description
Combined channel weight and status parameters (read register, I address)				
0	0	Current display weight/float ing point	DWord	Weight integer/weight floating-point/voltage value currently displayed (depending on parameter data type on meter), floating-point weight is displayed by default.

		weight/voltage value		
4	2	Status flag bit	Word	D15: 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)
				D14: write status, (Write data return status 0: no error 1: register address invalid 2: parameter error)
				D13: reserved
				D12: When there is a channel overflow or failure
				D11: Calculate weight using theoretical value, (prompt user when calculating weight using theoretical value)
				D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected)
				D9: Currently displayed net weight, (distinguish which weight is currently displayed)
				D8: millivolt stable, (when calibration millivolt stable sign)
				D7: Sensor negative overflow, lower than the sensor voltage allowed range
				D6: positive sensor overflow, beyond the allowable range of sensor voltage
				D5: Weight negative overflow, weight less than "-(Max range +9d)"
				D4: Weight positive overflow, weight greater than "Max range +9d"
				D3: Overflow status, (abnormal weight or sensor)
				D2: Shows weight minus sign, (shows weight negative)
				D1: zero, (weight in the range of 0+/- quarter d)
				D0: Stable
6	3	Error Code 1	Word	D15: Calibrated state (0: normal; 1: calibration failed)
				D14: unstable at calibration while waiting for stabilization
				D13: The remote tare operation allow switch is not turned on during remote tare operation
				D12: The tare is not allowed in the net weight state
				D11: Weight is negative when peeling
				D10: The sensor is positive overflow when peeling
				D09: Negative sensor overflow when peeling
				D08: Unstable when peeling
				D07: The net weight status does not allow zero clearing
				D06: The remote reset switch is not enabled during remote reset
				D05: The sensor is overflowing when the sensor is cleared
				D04: The sensor overflow is negative when the sensor is cleared
				D03: Unstable when clearing

				D02: Clear out of range
				D01: The reset is unstable during power-on
				D00: The power-on clear is out of range
Channel 1				
8	4	Channel 1 Weight/float ing-point weight/volta ge value	DWord	Channel 1 Weight integer/weight floating-point/voltage value currently displayed (depending on parameter data type on meter), floating-point weight is displayed by default.
12	6	Status flag bit	Word	D12 to D15: Reserved
				D11: Calculate weight using theoretical value, (prompt user when calculating weight using theoretical value)
				D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected)
				D9: Currently displayed net weight, (distinguish which weight is currently displayed)
				D8: millivolt stable, (when calibration millivolt stable sign)
				D7: Sensor negative overflow, lower than the sensor voltage allowed range
				D6: positive sensor overflow, beyond the allowable range of sensor voltage
				D5: Weight negative overflow, weight less than "-(Max range +9d)"
				D4: Weight positive overflow, weight greater than "Max range +9d"
				D3: Overflow status, (abnormal weight or sensor)
				D2: Show weight minus sign, (show weight is negative)
				D1: Reserved
				D0: stable
Channel 2				
14	7	Channel 2 Weight/float ing-point weight/volta ge value	DWord	Weight integer/weight floating-point/voltage value currently displayed (depending on parameter data type on meter), floating-point weight is displayed by default.
18	9	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 3				
20	10	Channel 3 Weight/float ing-point weight/volta ge value	DWord	Weight integer/weight floating-point/voltage value currently displayed (depending on parameter data type on meter), floating-point weight is displayed by default.
24	12	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 4				
26	13	Channel 4 Weight/float ing-point weight/volta ge value	DWord	Weight integer/weight floating-point/voltage value currently displayed (depending on parameter data type on meter), floating-point weight is displayed by default.

30	15	Status flag bit	Word	Reference Channel 1 Status flag bit
32	16	Read out value	DWord	The master station requests the data returned by the meter, the value obtained according to the "address requested to read"
Function operation and parameter modification (write register, Q address)				
0	0	Function operation	DWord	D5-D31 reserved
				D4: Mark zero
				D3: Gross net weight switch
				D2: Skin clearing
				D1: Remove the skin
				D0: Zero
4	2	The request to write value of the 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 is limited to 200-1187 .
8	4	Input value	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 200-1187 .
12	6	The read request of the modbus address	DWord	Modbus read operation address (note that you cannot read two-word addresses, write an odd-numbered address). This parameter modifies the interface module to be readable in all MODBUS address ranges.

11.4.1.2 PN acyclic parameter list

Modules	Parameter names	Initial value	Parameter description
Calibration and basic parameters	PWR-On Zero	0	Range: 0 to 101(percentage of full scale)
	TrZero Range	0	0-99d
	STAB Range	1	0-99d
	ZERO Range	20%	1% - 99%.
	Digit-Filter	4	0-9
	Adv. Filter	0	0-99.
	Unit	kg	g,kg,t,lb
	Decimal Point	0	Range: 0; 0.0; 0.00; 0.000; 0.0000
	Division	d=1	Meter indicates the minimum change in value Range: 1,2,5,10,20,50,100,200,500
	Full Scale	10000	The maximum indicator value of the instrument, generally take the sensor range. Range: minimum division *1000000 can be set. When out of range (" data out of range ") prompt information, so as not to damage the sensor by weighing overpressure.

11.4.2 Device description file GSD

The device description file and connection method of **GMT-X4** can be **downloaded**

from the website of Shenzhen Geman Technology Co., LTD. (www.gmweighing.com).

11.5 EtherCAT Communication

The **GMT-X4** monitor has two bus connection ports: **LAN1** and **LAN2**, with **LAN2** acting as the entrance when **EtherCAT** is connected. Any computer with a network interface card and embedded devices with Ethernet control can be used as a master station for **EtherCAT**, such as devices such as Huichuan PLC. The instrument can also be connected via **Twincat** software on a PC computer, in any case within the same local area network as the instrument. The following parameter table can be operated if the connection is successful.

11.5.1 Simplified parameter address

EtherCAT cycle parameter list

Data types	Parameter names	Parameter description
Parameter write address, writable only		
UDint	Function operation	D5-D7: reserved D4: CAL Zero D3: GS/NT D2: Clear Tare D1: TARE D0: ZERO
UDINT	The request to write value of the modbus address	Modbus write operation address (note that the address will not be written if the address changes) This parameter modifies the interface module to support MODBUS register address ranges limited to read and write parameters.
UDINT	Input value	Modbus write operation value, write this data to the "modbus address of the requested value" (note that it will only be written to the meter if the value changes).
UDINT	The read request of the modbus address	Modbus read operation address (note that you cannot read two-word addresses, write an odd-numbered address).
Parameter read address, read only		
Combination channel		
REAL	Floating-point weight	Weight currently displayed, floating point type
UINT	Weight status bit	D15: 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) D14: Write status, (Write data return status 0: no error 1: parameter error) D12-D13: reserved D11: Calculate weight using theoretical values, (prompt user when calculating weight using theoretical values) D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected) D9: Currently displayed net weight, (distinguish which weight is currently displayed) D8: Millivolt stability (millivolt stability marker during calibration) D7: Sensor negative overflow, lower than the sensor voltage allowed range

		D6: positive sensor overflow, beyond the allowable range of sensor voltage D5: Weight negative overflow, weight less than "-(Max range +9d)" D4: Weight positive overflow, weight greater than "Max range +9d" D3: Overflow status, (abnormal weight or sensor) D2: Shows weight minus sign, (shows weight negative) D1: zero, (weight in the range of 0+/- quarter d) D0: Stable
UINT	Error code	D15: Calibration status (0: normal; 1: calibration failed) D14: unstable at calibration while waiting for stabilization D13: The remote tare operation allow switch is not turned on during remote tare operation D12: The tare is not allowed in the net weight state D11: Weight is negative when peeling D10: The sensor is positive overflow when peeling D9: Negative sensor overflow when peeling D8: Unstable when peeling D7: The net weight status does not allow zero clearing D6: The remote clear switch is not enabled during remote clear D5: The sensor overflows when the sensor is cleared D4: The sensor overflows negatively when the sensor is cleared D3: Unstable when clearing D2: Clear out of range D1: The reset is unstable during power-on D0: The power-on clear is out of range
Parameter addresses of channels 1 to 4		
REAL	Floating-point weight	Weight currently displayed, floating point type
UINT	Weight status bit	D12-D15: Reserved D11: Calculate weight using theoretical values, (prompt user when calculating weight using theoretical values) D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected) D9: Currently displayed net weight, (distinguish which weight is currently displayed) D8: millivolt stable, (when calibration millivolt stable sign) D7: Sensor negative overflow, lower than the sensor voltage allowed range D6: positive sensor overflow, beyond the allowable range of sensor voltage D5: Weight negative overflow, weight less than "-(Max range +9d)" D4: Weight positive overflow, weight greater than "Max range +9d" D3: Overflow status, (abnormal weight or sensor) D2: Shows weight minus sign, (shows weight negative) D1: Reserved D0: stable

DINT	Read out value	The master station requests the data returned by the meter, the value obtained according to the "address requested to read"
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11.5.2 Acyclic parameters

Refer to the Profinet newsletter [section 11.4.1.2 PN](#) acyclic Parameters.

11.5.3 Device description file ESI

The device description file and connection method of **GMT-X4** can be **downloaded** from the website of Shenzhen Geman Technology Co., LTD. (www.gmweighing.com).

11.6 EthernetIP Communication

The **GMT-X4** monitor has two EthernetIP bus connection ports, LAN1 and LAN2, **which can be connected to the EthernetIP bus as an EtherneTIP-IO slave station.**

The instrument **IP address** can be viewed in **【 Communication 】** parameters -- **【 EthernetIP 】**; **MAC address** in **【 Maintenance 】** parameters -- **【 System info 】** check.

11.6.1 IO Status Address (Loop parameter)

Under **EIP** communication, **GMT-X4** provides **36 bytes INPUT** and **16 bytes OUTPUT**. The **master** station can read and control the status of the weighing **display through these I/ OS**. IO module parameters of EIP are the same as those of PN communication. For specific parameters and offsets, refer to Profinet Communication section 11.4.1.1 PN [Cycle](#) Parameters.

11.6.2 Acyclic parameters

Refer to the Profinet newsletter [section 11.4.1.2PN](#) acyclic Parameters.

11.6.3 Device description file EDS

The equipment description file and connection method of **GMT-X4** can be **downloaded** from the website of Shenzhen Geman Technology Co., LTD. (www.gmweighing.com)..

11.7 CCLink IE Field Basic Communication

When CCLink IE Field Basic is selected for **extended communication**, it can communicate with PLC, and the IP of the instrument and PC and PLC need to be in the same LAN. The instrument IP address can be **set in 【 Communication 】** parameters -- **【 CCLink IEF Basic 】**; MAC address can be viewed in **【 Maintenance 】** parameters - **【 System Info 】**. 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 station -> Master station); 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 station -> Master station) (in words); Output data area RWw: 32 words (Master -> Slave).

11.7.1 Cycle parameter address

Offset	Parameter name	Data type	Parameter Description
Weight and status parameters (read register, I address)			
Combinatorial channel			
RWr0-RWr1	Weight/floating-point weight/voltage value /AD code	DWord	Currently displayed weight integer/weight floating-point/floating voltage value /AD code (depending on the data type parameter of the meter) displays floating-point weight by default.
RWr2	Status flag bit	Word	D15: 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) D14: write status, (Write data return status 0: no error 1: register address invalid 2: parameter error) D12 to D13: reserved D11: Calculate weight using theoretical value, (prompt user when calculating weight using theoretical value) D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected) D9: Currently displayed net weight, (distinguish which weight is currently displayed) D8: millivolt stable, (when calibration millivolt stable sign) D7: Sensor negative overflow, lower than the sensor voltage allowed range D6: positive sensor overflow, beyond the allowable range of sensor voltage D5: Weight negative overflow, weight less than "-(Max range +9d)" D4: Weight positive overflow, weight greater than "Max range +9d" D3: Overflow status, (abnormal weight or sensor) D2: Shows weight minus sign, (shows weight negative) D1: zero, (weight in the range of 0+/- quarter d) D0: Stable
RWr3	Error Code 1	Word	D15: Calibrated state (0: normal; 1: calibration failed) D14: unstable at calibration while waiting for stabilization D13: The remote tare operation allow switch is not turned on during remote tare operation D12: The tare is not allowed in the net weight state D11: The weight is negative when the skin is removed D10: The sensor is positive overflow when peeling D09: Negative sensor overflow when peeling D08: Unstable when peeling D07: The net weight status does not allow zero clearing D06: The remote reset switch is not enabled during remote reset

			D05: The sensor is overflowing when the sensor is cleared D04: The sensor overflow is negative when the sensor is cleared D03: Unstable when clearing D02: Clear out of range D01: The reset is unstable during power-on D00: The power-on clear is out of range
Channel 1			
RWr4- RWr5	Weight/floating-point weight/voltage value /AD code	DWord	Currently displayed weight integer/weight floating-point/floating-point voltage value /AD code (depending on data type parameters of the meter) displays floating-point weight by default.
RWr6	Status flag bit	Word	D12-D15: Reserved D11: Calculate weight using theoretical values, (prompt user when calculating weight using theoretical values) D10: ADC failure, (ADC initialization failure or sampling interruption longer than expected) D9: Currently displayed net weight, (distinguish which weight is currently displayed) D8: Millivolt stability (millivolt stability marker during calibration) D7: Sensor negative overflow, lower than the sensor voltage allowed range D6: positive sensor overflow, beyond the allowable range of sensor voltage D5: Weight negative overflow, weight less than "-(Max range +9d)" D4: Weight positive overflow, weight greater than "Max range +9d" D3: Overflow status, (abnormal weight or sensor) D2: Shows weight minus sign, (shows weight negative) D1: Reserved D0: stable
Channel 2			
RWr7- RWr8	Current weight/floating-point weight/voltage value /AD code	DWord	Currently displayed weight integer/weight floating-point/floating-point voltage value /AD code (depending on data type parameters of the meter) displays floating-point weight by default.
RWr9	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 3			
RWr10- RWr11	Current weight/floating-point weight/voltage value /AD code	DWord	Currently displayed weight integer/weight floating-point/floating-point voltage value /AD code (depending on data type parameters of the meter) displays floating-point weight by default.

RWr12	Status flag bit	Word	Reference Channel 1 Status flag bit
Channel 4			
RWr13- RWr14	Current weight/floating-point weight/voltage value /AD code	DWord	Currently displayed weight integer/weight floating-point/floating-point voltage value /AD code (depending on data type parameters of the meter) displays floating-point weight by default.
RWr15	Status flag bit	Word	Reference Channel 1 Status flag bit
RWr16- RWr17	Read out values	DWord	The master station requests the data returned by the meter, the value obtained according to the "address requested to read"
Function operation parameters (write register, Q address)			
RY00	Function operation	DWord	Zeroclear
RY01			Peel
RY02			Bark cleaning
RY03			Gross net weight switch
RY04			Zeroing
RY05~ RY1F			Reserve
RWw0- RWw1	The request to write value of the 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 is limited to 200-1187 .
RWw2- RWw3	Input value	DWord	Modbus write operation value, write this data to the "modbus address of the requested value" (note that it will only be written to the meter if the value changes).
RWw4- RWw5	The read request of the modbus address	DWord	Modbus read operation address (note that you cannot read two-word addresses, write an odd-numbered address). This parameter modifies the interface module to be readable in all MODBUS address ranges.

11.7.2 List of acyclic parameters

Refer [to the](#) Profinet newsletter [section 11.4.1.2PN acyclic Parameters](#).

11.7.3 Device Description file CSPP

The device description file and connection method of **GMT-X4** can be **downloaded** from the website of Shenzhen Geman Technology Co., LTD. (www.gmweighing.com).

Chapter 12 Dimensions of Products

