



GMT-X4

User's Manual

110611040002
VER01.00.01

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Warning

The transmitter uses DC24V power supply, use AC220V power will cause permanent damage to the transmitter.

Please keep the transmitter well grounded.

The transmitter is electrostatic sensitive equipment, please pay attention to take anti-static measures in the use and maintenance

Standard &
Certification

Product Standard: GB/T 7724—2008

Verification Regulation: JJG 669-2016

CMC Accuracy Class 3 (6000e);

Guangdong system 0000000048;

Safety Certificate: CE

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1. General Description

1.1 Functions and Characteristics

Shell type	DIN Rail mounted, stainless steel housing		
load cell interface	4 way 6 wire analog load cell weighing platform interface, connection 10 350 Ω load cells at most		
Display	160*128 1.96"white light OLED		
Language	Support Chinese,English		
Preset point function	8 - way com PARA tor 5 comparison options		
Interface	Load cell interface	4 way 6 line analog load cell scale interface, 40*350Ω load cell maximum connect	
	1 way RS485 interface	Support modbus RTU and connect method	
	1 way RS232 interface		
	IO interface		4 in 8 out transistor input output interface, each channel 1 in 2 out, low level valid
	Option 1	1 way CAN OPEN Bus interface,support CAN communication	
	Option 2	4 way analog input output interface(Current/voltage)	
	Option 3	Signal network port, support TCP/IP	
		Profinet Bus interface	
		Ethernet/IP Bus interface	
		EtherCAT Bus interface	

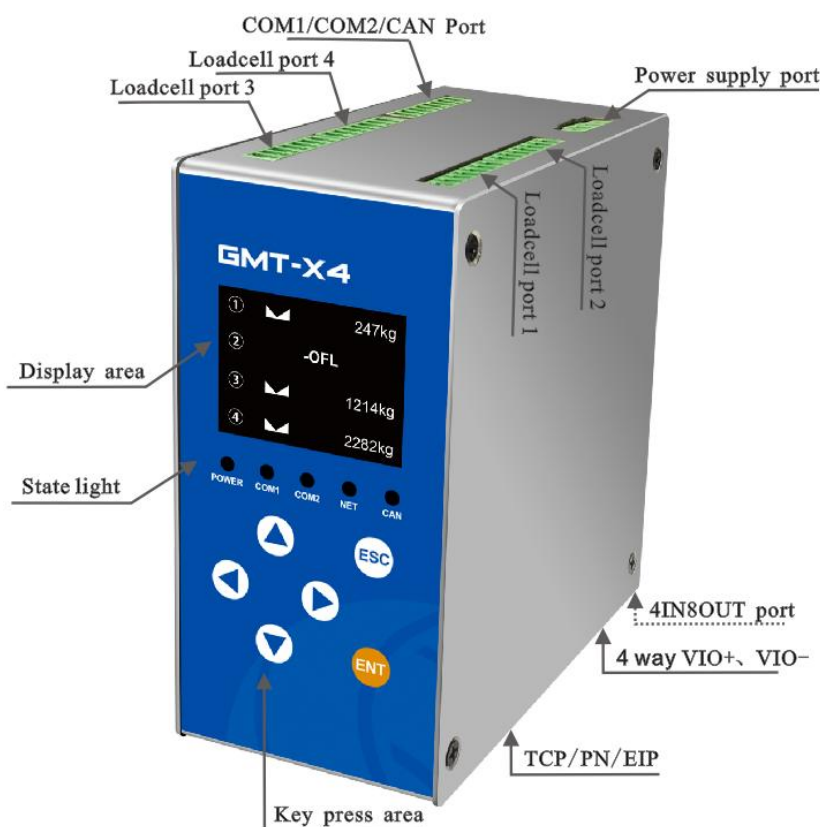
1.2 Technical Specifications

Power supply	24VDC (18~36VDC)
Dimension	62*134*127.5 (mm)
GW	883g
Certified working environment	-10 ~ 40 $^{\circ}\text{C}$; 90 %R.H without dew
Working environment	-20 ~ 60 $^{\circ}\text{C}$; 90 %R.H without dew
Storage environment	-40 ~ 60 $^{\circ}\text{C}$; 90 %R.H without dew
Power	20W
Load cell excitation voltage	5V 200Ma (MAX)
Load cell requirements	4 simulated Load cell, connect 40 350 Ω load cells, most support 1 mv/V, 2 mv/V, 3 mv/V sensitivity
Input sensitivity	0.1Uv/d

Input range	0.00 ~ 15mV (load cell 3mV/V)
Non-linearity	0.01% F.S
A/D conversion speed	50; 60; 100; 120; 200; 240; 400; 480; 800; 960 (SPS)
Display Precision	1/1000000
Keyboard	6 key sound keyboard
Decimal Places	0, 0.0, 0.00, 0.000, 0.0000; 5 options
Overload	OFL

2. Panels and buttons

2.1 Front Panel Description









Status :

- **Power:** lights up when indicator is power on
- **COM1 :** Communication indicator. After the RS485 connection is successful, the indicator blinks during data communication
- **COM2 :** Communication indicator. After the RS232 connection is successful, the indicator blinks during data communication
- **NET :** Communication indicator. This indicator blinks during network port communication or bus communication.
- **CAN:** Communication indicator: blinks when CAN communicate.

2.2 Key specification

GMT-X4 has 6 button functions, short press and long press have differences, button diagram is shown as below:

Key	Interface	Short press	Long press
	Main	Weight/analog display	Quickly view the voltage values of load cell in channels 1 to 4

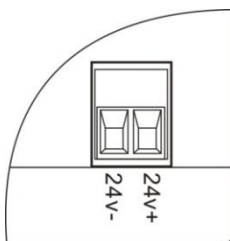
	Menu interface	Previous Sub PARAttransmitter	/
	Data input	Data +1	Switch Capital
	Option select page	Previous Sub PARAttransmitter	/
	Main	Channel 1~4 tare /clear tare	Channel 1~4 gross/net mode shift: gross/net mode
	Menu interface	Next Sub PARAttransmitter	/
	Data input	Data or letter-1	/
	Menu interface	Next Sub PARAttransmitter	/
	Main	Check channel 1~4 tare value	Channel 1~4 quick set tare,set tare value
	Menu interface	Next Sub PARAttransmitter	/
	Data input	Input position move to left	/
	Option select	/	/
	Main	/	Channel 1 ~ 4 quick check the zero voltage
	Menu interface	Next Sub PARAttransmitter	/
	Data input	Input position move to right	/
	Option select	/	/
	Main	Menu page	Quickly view the front and back software versions and compilation dates
	Menu interface	Comfirm Selection	/
	Data input	Comfirm Selection	/
	Option select	Comfirm Selection	/
	Main	Quick channel 1~4 zeroing (gross mode valid)	Fast Calibrate Zero(If Gross), N/A(if Net)
	Menu interface	Return to previous level	/

	Data input	Exit	/
	Option select	Back to Weight Display page	/

3 Installation and Wiring

3.1 Connection of Power Supply

GMT-X4 weighing transmitter connects with DC24V power supply as follows:



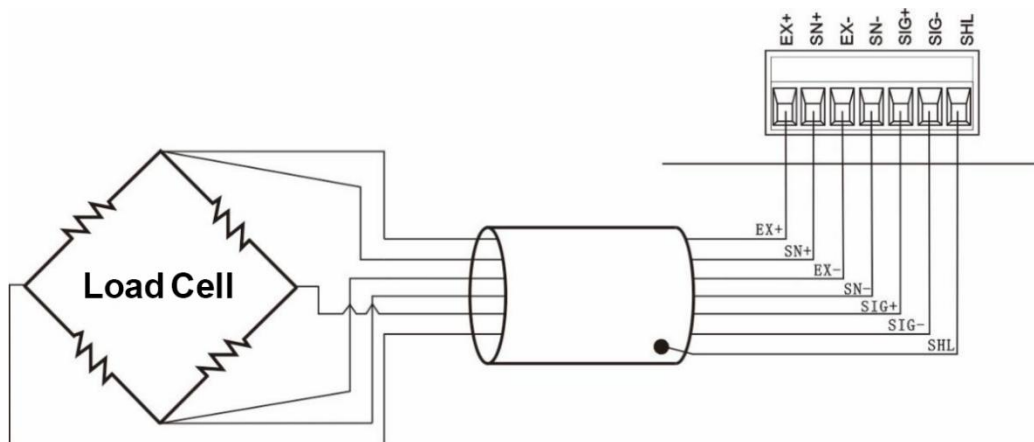
NOTE: The transmitter uses DC24V power supply, use AC220V power will cause permanent damage to the transmitter.

3.2 Connection of Load Cell

GMT-X4 weighing transmitter connects with bridge type resistance strain gauge load cells. : (Note: n=1,2,3,4)

PORTS	EXn+	SNn+	EXn-	SNn-	SIGn+	SIGn-	SHL
6 wires	EX+	SN+	EX-	SN-	SIG+	SIG-	SHL
4 wires	EX+		EX-		SIG+	SIG-	SHL

※ When connected to a 4-wire load cell, the EXn+ and SNn+ ports, EXn- and SNn- ports must be short-connected. Otherwise, the transmitter weight data reading is not normal.



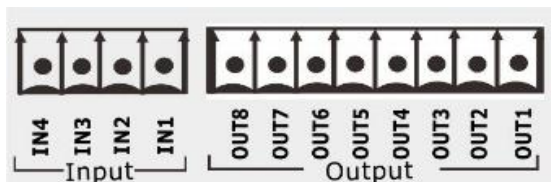
NOTE:

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.

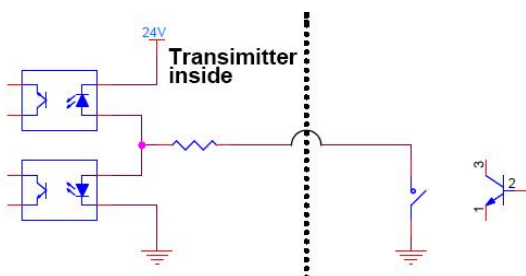
3.3 Connection of I/O Terminal

GMT-X4 weighing transmitter I/O module is an optional interface function , need to declare before order, **4 IN 8 OUT**, Standard **IO** input, output connector factory default low level is valid. Adopt transistor output mode, each drive current 200mA.



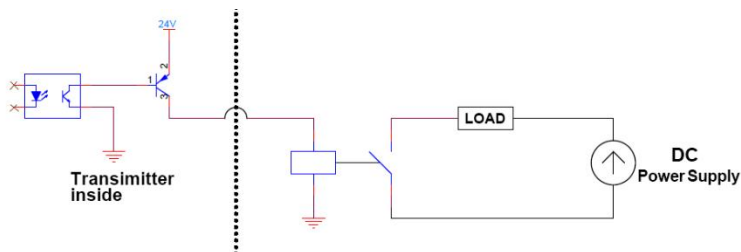
Option 1

Input diagram:



Low level mode

Output diagram:



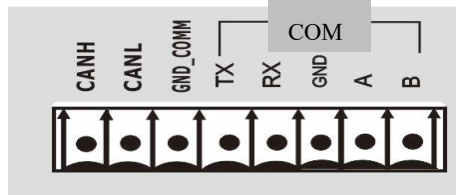
Low level mode

The default definition is as follows:

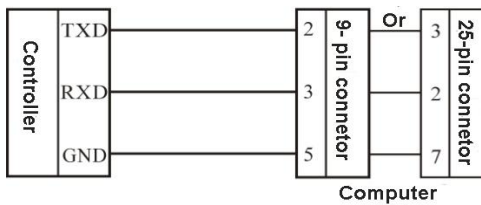
Output		Input	
OUT1	NONE	IN1	NONE
OUT2	NONE	IN2	NONE
OUT3	NONE	IN3	NONE
OUT4	NONE	IN4	NONE
OUT5	NONE		
OUT6	NONE		
OUT7	NONE		
OUT8	NONE		

3.4 Serial port connection

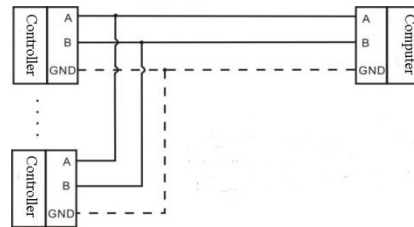
GMT-X4 : 1 way RS485, 1 way RS232



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 Serial port fault troubleshooting

If serial port can't communicate, please check:

- Refer 3.5 to check line, make sure connection is correct.

RS232 must connect 3 lines, Rx, Tx, GND

RS485 must connect line A, B

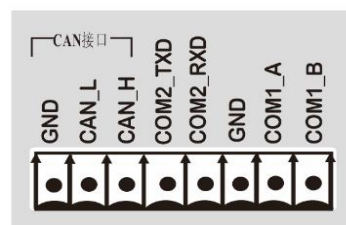
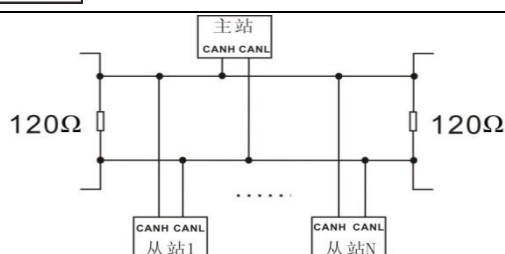
- Make sure connecting port PARAttransmitters are the same to computer.

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

3.5 CAN connect

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

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

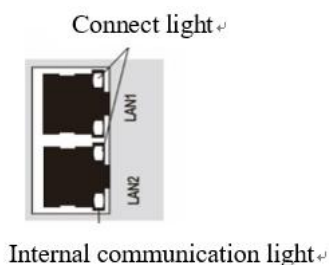


3.6 NetCom Connection

GMT-X4 support NetCom communication and PN, Ethernet CAT bus communication mode (optional fuction,make statement when order) .Support TCP protocol and Profinet, Ethernet CAT bus protocol.

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

2) 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 Network can't communicate, please check:

- Check Network indicator light

Hardware connection is normal, the communiation light inside is ON.

The network cable is connected and the connection indicator blinks

○ Check whether the communication protocols is consistent with the host computer and PLC.

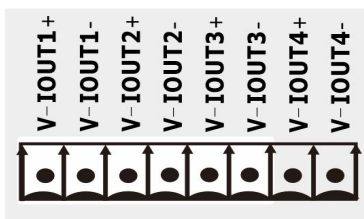
○ Verify that GMT-X4 can be pinged from the network, if not, check the hareware interface section.

- Check whether IP address conflicts exist

- Restart transmitter

3.7 Analog connection

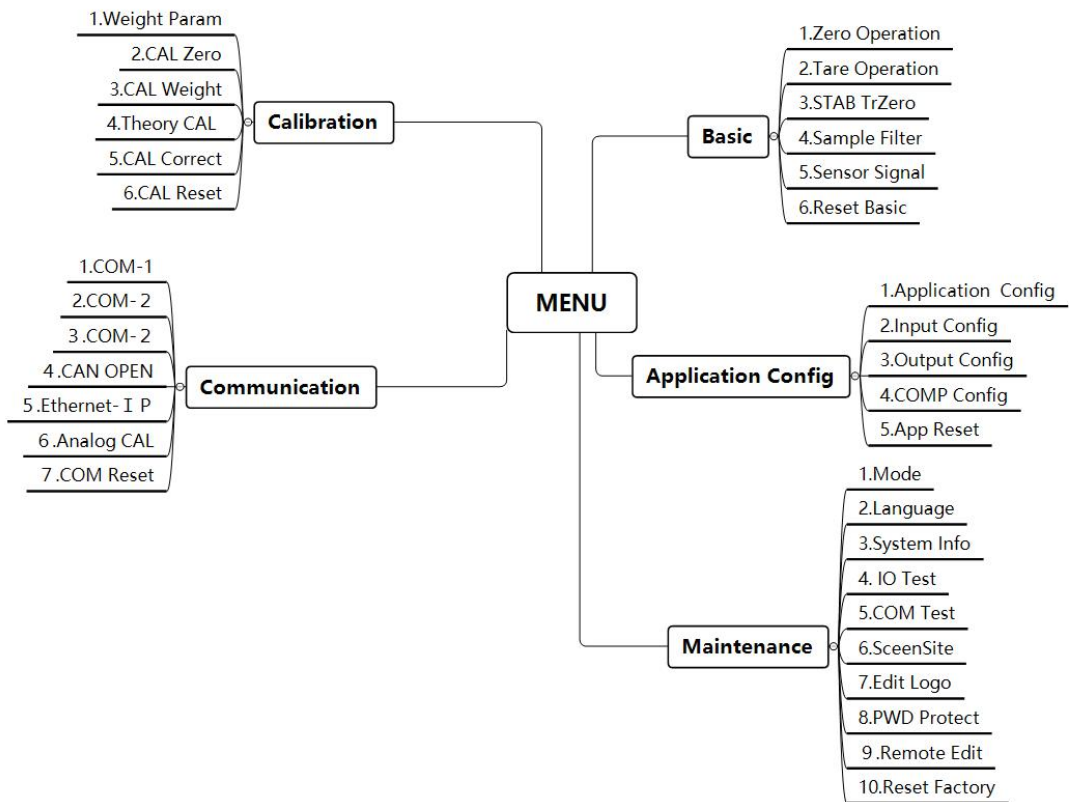
GMT-X4 has analog output function (optional fuction,make statement when order), can equipped with 4 analog output function. Each channel corresponds to one analog output function. Interface is as follows: **V-IOUTx+** (+), **V-IOUTx-** (-) (Note: x=1~4, means 4 channels)



Analog output is divided into voltage output type and current output type, support **0~5V, 0~10V, 4~20mA, 0~20mA, 0~24mA**. User can select the corresponding mode in the output mode of analog quantity parameter.

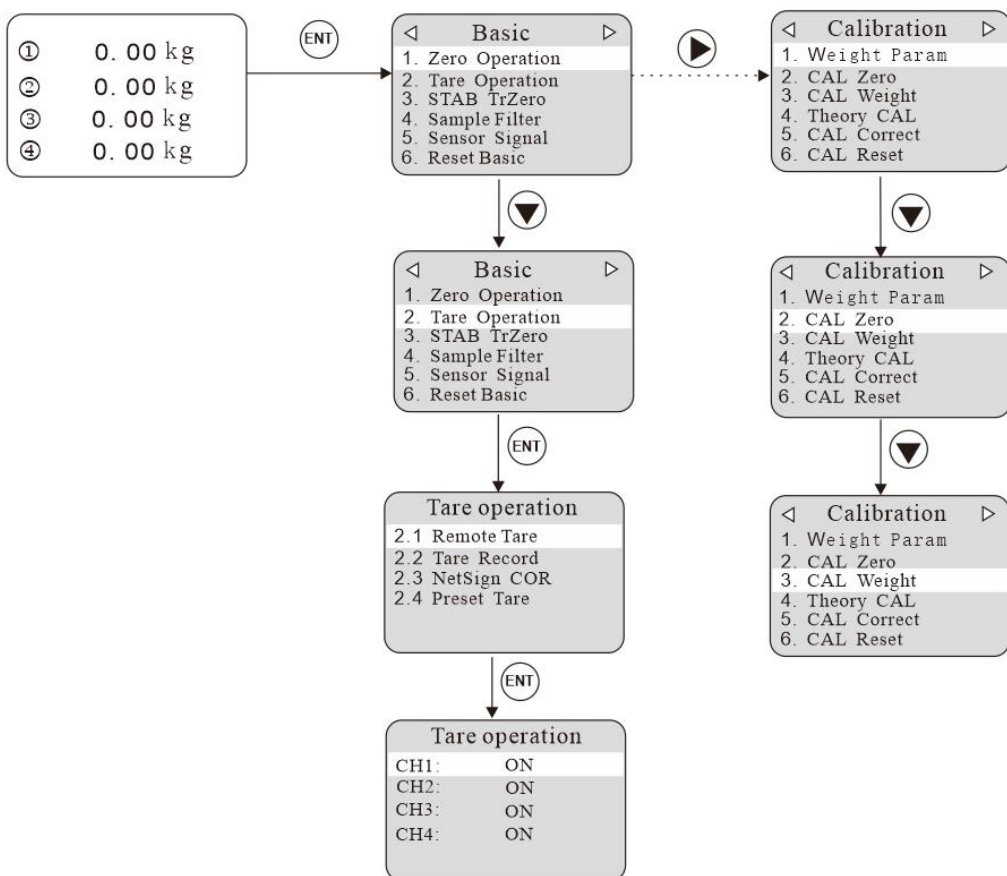
Analog mode, calibrate please refer to [8 communication](#)

4 Menu Review

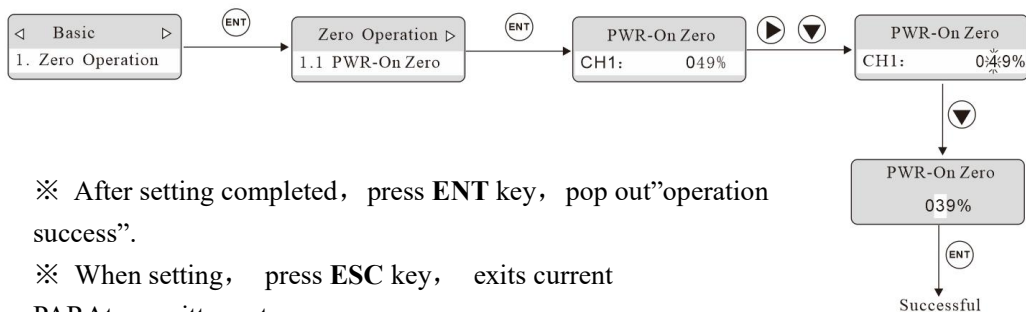


4.1 PARAttransmitter option and setting

PARAttransmitter option: (Select tare operation switch PARAttransmitter)



PARA transmitter Setting: (Set the power reset range from 49% to 30%)



※ After setting completed, press **ENT** key, pop out "operation success".

※ When setting, press **ESC** key, exits current PARAttransmitter entry.

※ Refer to the 2nd chapter to the specific meaning of the key
【key function】

5. Basic PARA transmitter

5.1 Content

PARAtransmitter	DefaultValue	Decription
1. Zero Cfg		Set CH1~4 Zero PARAtransmitters
1.1 PWR-On Zero	0	Range: 0~101 (× full range %); 0 : turn off PWR-On Zero; 1-100 : according full range 1-100% zeroing; 101 : reset to last zero before turn OFF
1.2 Remote Zero	ON	After set ON, the zeroing operation can be carried out through the communication port.If set to OFF, the communication port can not be reset.
1.3 Zero Range	20%	Range: 1~99 (× full range %)
2. Tare Cfg		Set CH1~4 tare cfg PARAtransmitters
2.1 Remote Tare	ON	Range: OFF : can't communication to tare; ON : can communication to tare
2.2 Tare Record	OFF	Range: OFF ; ON : Reset after power off, still maintant previous tare value.
2.3 NetSign COR	OFF	Range: Disable; CorrectTare; BackToGross
2.4 Preset Tare	0	Range: 0 ~full range, write tare value.
3. STAB&TrZero		Set CH1~4 STAB TrZero PARAtransmitters
3.1 STAB Range	1d	Range: 0-99 , When the PARAtransmitter is 0, turn off the STAB function and the weight STAB marker is always in effect.When the PARAtransmitter is not 0, the weight is stable if the weight variation range is not greater than the set fractional read during the stability determination time
3.2 STAB Timer	1000ms	Range: 1-5000 Milliseconds.If the weight range does not exceed the STAB range during that time, the weight is stable
3.3 TrZero Range	1d	Range 0-99d .Turn off the zero tracking function when the PARAtransmitter is 0.When the PARAtransmitter is not zero, the weight change is less than the range of zero tracking time, the system will automatically

		track zero.
3.4 TrZero Time	1000ms	Range 1-5000ms , during the tracking time, if the weight change is less than the tracking range, the system will automatically track the zero position
4. FIR&Sample		Set CH1~4 filter PARAttransmitters
4.1 Digit-Filter	4	Range: 0-9 ; The larger the number is, the higher the filtering intensity will be, but the response time will be longer.
4.2 Adv. Filter	00	Range 0-99d , At 0, the steady-state filter is turned off. When the PARAttransmitter is non-zero, if the weight change is within the range, then the steady-state filter is started
4.3 AD Sample Rate	200	Range: 50; 60; 100; 120; 200; 240; 400; 480; 800; 960 (SPS)
5. Load cell signal		Set CH1~4 signal range
5.1-5.4 CH1-4	0-10mV	Range: 0-5mV; 0-10mV; 0-15mV Transmitter according input range to adjust signal sampling range to make sure more specific
6. Basic PARAttransmitter reset		
6.1~6.4 reset CH1-4	//	Reset factory defaults to each Channel PARAttransmitters

5.2 Zero Cfg

Zero success condition:

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

Zero Cfg:

- 1) Press Zero; 2) Zero input port is valid; 3) communicate port zero (1.2 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/FORBIT Tare Record function. If turn ON, power off restart, retain tare weight.

NetSign COR:

OFF: 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.

Back to Tare: 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: *er* The transmitter is in tare state, when clear tare, transmitter record GW, enter NW mode.

& The transmitter can't be reset in the mode of NW display.

6 Calibration

When **GMX-T4** weight transmitter or any part of the weighing system is changed for the first time and the current equipment calibration PARA transmitters can't meet the user's requirements, the display shall be calibrated. Calibration can determine the system zero and gain of the weighing system.

6.1 Weight Format

PARAtransmitter	Initial Value	Decription
1. Weight Format		3.1 Calibration 1
1.1 Unit	kg	Range: t; kg; g; lb
1.2 Decimal	0	Range: 0; 0.0; 0.00; 0.000; 0.0000
1.3 Division	1	Range: 1, 2, 5, 10, 20, 50
1.4 Full Scale	10000	The maximum value of the transmitter is generally taken as the range of the load cell. Range: Division x 200000 Configurable. When the Range is over ("data over Range"), a message is displayed to prevent the weighing overvoltage from damaging the load cell.
2. CAL Zero		CH1~4 CAL Zero operation
2.1 Auto Capture	After emptying the scale, press the "OK" button and set the current state to zero。	
2.2 Key In mV	Manually and manually input the voltage of 4 decimal points as the zero point voltage	
3. CAL Weight		CH1~4 CAL Weight operation
3.1~3.4 CH1-4	Weight CP 1	Calibrate weight points, support 5-point calibration.
	Weight CP 2	When the front point is calibrated, the other weight points will be reset to the uncalibrated state (the default value is 10.0000mV, 10000kg).
	Weight CP 3	
	Weight CP 4	
	Weight CP 5	If the marking point 1 is performed, the marking point 2-5 is reset to 0
4. Theory CAL		CH1~4 Theory CAL
4.1 LC mV/V	2.0000	True load cell sensitivity, 4 decimal points, average sensitivity if multiple load cells
4.2 LC Capacity	10000	The true load cell range, if there are more than one load cell, is the sum of all load cell ranges
4.3 Use T-CAL	OFF	Enable calibration of theoretical values and make them effective. Range: OFF; ON.
5. CAL Correct		CH1~4 CAL Correct

5.1 Correct Coef	1.00000	After calibration, if the zero point is correct, the weight has deviation, which can be used to correct the weight value. The value calculation: if the transmitter weight is A, but the weight after weighing is B, the correction coefficient is calculated: (actual weight \times current correction coefficient)/B shows A weight
6. CAL Reset		
6.1~6.4 reset CH 1-4	//	The calibration PARA transmitters of each channel are restored to factory Settings, and the reset is successful by pressing the [ENT] confirm key.

6.2 CAL Zero

Zero calibration is the zero calibration of the scale.

Zero calibration can be done in two ways: automatic acquisition and manual input. The “Auto Capture” method must be used for zero calibration when new equipment or weighing structure is adjusted

Auto Capture:

Calibration conditions: stable scale

Transmitter displays current millivolt. After empty the scale, press **ENT** to calibrate the current state to zero.

Load cell voltage
0. 6688mV

Key In mV:

User need key in voltage value of ZERO point to calibrate ZERO

222 Key In mV
00. 0000mV

※ Generally used for no-weight calibration, the value recorded by the data recorded during the calibration of the weights is used for Key In mV.

6.3 CAL Weight

Cal weight is to use standard weights for weight calibration.

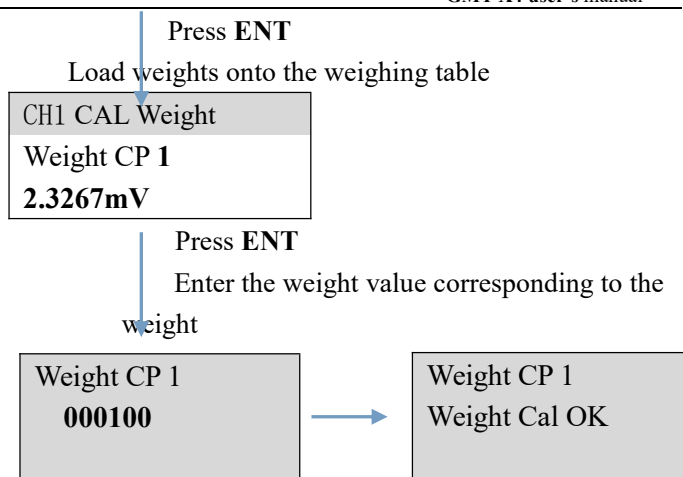
Supports 5-point calibration, providing users with the maximum ability to select calibration points according to their needs.

Calibration method (take CH 1 for example):

※ Zero calibration should be completed before weight calibration

CAL Weight

3.1CH1



Multi-point calibration attention:

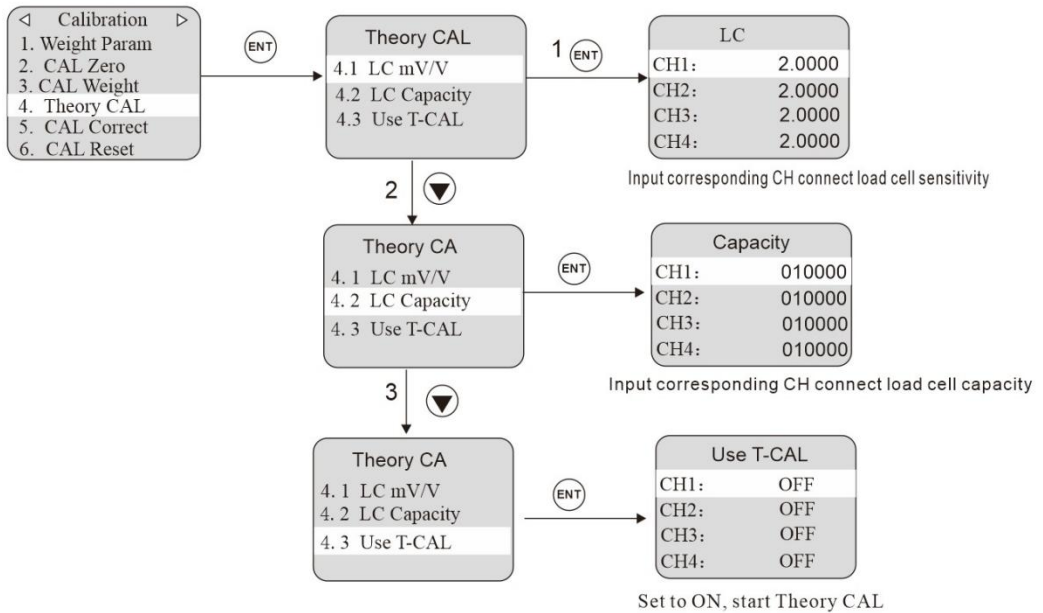
- 1) User can choose the number of marking points, such as single point calibration, which can be withdrawn after the first weight point is calibrated
- 2) Cross-point calibration is not allowed. For example, when using 3-point calibration, it is necessary to calibrate the Weight CP1, 2 and 3, but it is not possible to calibrate the Weight CP3 and 4 by crossing the Weight CP2 after the completion of the Weight CP1
- 3) In the multi-point calibration, the weight should be increased. For example, the weight of Weight CP2 must be heavier than the weight of Weight CP1

6.4 Theory CAL

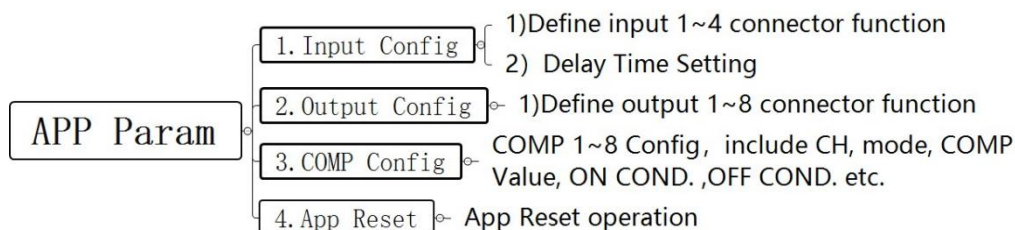
Calibration of theory value means that weight calibration is performed by inputting load cell sensitivity and load cell range value

Theory CAL takes 3 steps:

- 1) Set load cell sensitivity (If multiple load cell are connected, input the mean value)
- 2) Set total range of the load cell (If connected to more than one load cell, input total range)
- 3) Turn on "Use T-CAL" key.



7 Application setting



7.1 Input Cfg

Enter port configuration PARA transmitters in the transmitter application PARA transmitter item. The transmitter is equipped with 4 input interfaces and 8 output interfaces, which can meet the function of 4 in and 8 out I/O.

The application function of input port 1~4 and the shaking time can be set se PARA tely. The initial default function is not available, and the customer can define it by himself.

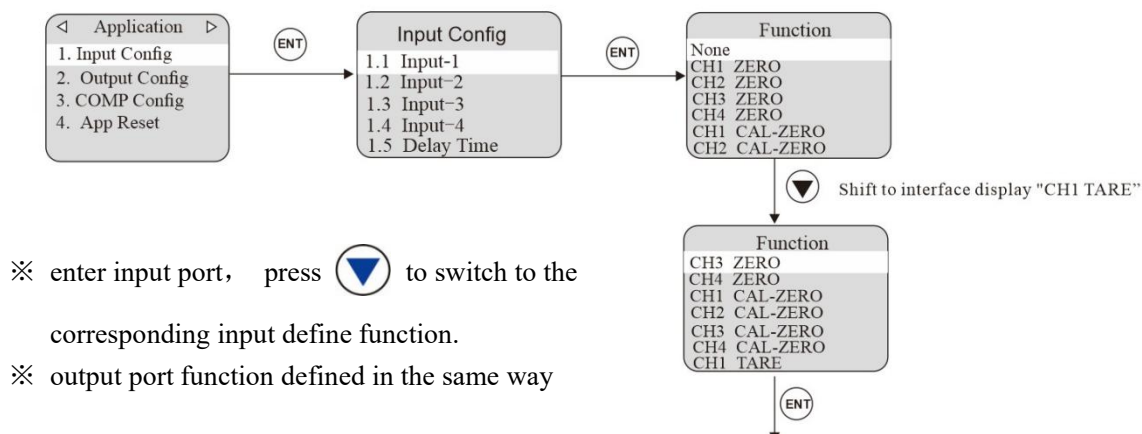
PARAtransmitter	PARAtransmitter Item	Specification
Input Config	Input 1~4 function	Range: NONE,CH1~4 ZERO,CH1~4 CAL-ZERO,CH1~4 TARE,CH1~4 CLEAR-TARE,CH1~4 GROSS/NET,COMP-ON; ※It is defined as nonfunctional that is, the input port is nonfunctional
	Input 1~4 Delay Time	Avoid misjudgment caused by signal jitter. Initial Value: 5ms ; Range: 0~200ms

Input fuction description:

Function	Description
NONE	/
CH1~4 ZERO	When this signal is valid, start zeroing
CH1~4 CAL-ZERO	This signal is valid and (273) hardware protect ON/OFF turn to OFF, starts CAL ZERO
CH1~4 TARE	This signal is valid, starts tare
CH1~4 CLEAR TARE	This signal is valid, starts clear tare, means recover clear tare weight
CH1~4 GROSS/NET	This signal input is valid, starts NET/GROSS shift.
COMP-ON	This function is defined. The output of the comparison point is controlled by the state of the I/O port.If the comparison condition is

	valid and the input is valid, the com PARAtor output will be valid; otherwise, it will not be output. If this function is not defined, the comparison condition holds and there will be output, which is not controlled by the input port.
--	--

Example: Define Input2 as TARE



7.2 Output Cfg

Output port configuration PARA transmitters apply to the transmitter PARA transmitter item. The functions of outlet 1-8 can be set. The initial default is no function, but the customer can define it by himself

PARA transmitter	PARA transmitter Item	Specification
Output Config	Output 1-8 function	Range: NONE, COMP 1-8, CH1~4 STAB, CH1~4 ZERO, CH1~4 NET, CH1~4 -SIGN; ※Define no function means Output no function

Output function description

Function	Description
No function	No output
COMP 1-8	Com PARAtor 1-8 has output when conditions are met; If the input port is set to enable the comparison point, the input is valid and the com PARAtor has an output
CH1~4 STAB	Transmitter stab signal output is valid
CH1~4 ZERO	Transmitter zero indicate light valid output is valid
CH1~4 NET	When transmitter is in net weight, output is valid
CH1~4-SIGN	When display weight less than 0, output is valid

7.3 COMP Config

In the com PARAtor configuration PARA transmitter, can set the comparison channel 1~8, comparison mode, comparison condition, ON COND. and OFF COND.

GMT-X4 provides 8 com PARAtors, 341x—348x

PARAtransmitter	Specification
COMP CH	Which channel is compared in independent mode: 0- CH 1, 1- CH 2, 2- CH 3, 3- CH 4. default: 0
COMP Mode	weight/flow judgment: OFF, \leq (weight), $=$ (weight), \neq (weight), \geq (weight), $<>$ (weight), \nlessgtr (weight); ※ If current weight is NET, the weight is NET, if current weight is gross weight, the weight is gross weight.
COMP Value-1	Higher priority comparison value. When there is only one comparison PARAttransmitter, this comparison value is used by default. Initial value: 0; Range: -999999-999999. (Press the up and down arrow to switch between positive and negative signs)
COMP Value-2	When two comparison values are used, the value must be greater than the first comparison value. Initial value: 0; Range: -999999-999999 (Press the up and down arrow to switch between positive and negative signs)
ON COND.	When the comparison is successful, the transmitter outputs additional constraints that are valid. Initial value: Immediately; Option: 1, Immediately (Output immediately as long as the comparison condition holds); 2, Stable (Output is provided when the comparison condition is valid and the current weight is stable); 3, Debounce (The output is displayed after the success time exceeds the decision time)
TRUE JudgeT	Initial value: 1000ms; Range: 0~50000ms
OFF COND.	An additional restriction that invalidates the transmitter output when the comparison changes from success to failure; Initial value: Immediately; Option: Immediately, Stable, Debounce (The failure time becomes invalid after the failure time exceeds the FALSE HoldT)
FALSE HoldT	Initial value: 1000ms; Range: 0~50000ms

7.4 Application Example

Example 1: When the weight is greater than or equal to 500g, the output 1 is valid; when the weight is not satisfied and the weight is stable, the output 1 is invalid.

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

2) The comparison mode is set to: \geq (weight)

3) The comparison value 1 is set to: **500**

4) The comparison value 2 is set to 0 : **0** (single point comparison, this PARAttransmitter is invalid)

5) ON COND. is set to: Output after weight STAB

6) TRUE JudgeT: **0** (in non-delay mode, this PARA transmitter is invalid)

7) OFF COND.is set to: Invalid after weight STAB

8) FALSE HoldT: **0** (in non-delay mode, this PARA transmitter is invalid)

※If the weight is $\geq 500\text{g}$, the steady state remains invalid, then output 1 does not switch to the valid state.

Example 2: The weight is $\nless\gtr 200\text{g}$, **500g**, after delay **5ms** output **4** is valid, if the condition is not met, output 4 is invalid after 5mS delay.

Setup: **1)** Output Config \rightarrow Output **-4** Set to: **COMP 1**

2) The comparison mode is set to: $\nless\gtr$ (weight)

3) The comparison value 1 is set to: **200**

4) The comparison value 2 is set to: **500** (this value should be greater than 1)

5) ON COND.is set to: Delay output

6) TRUE JudgeT: **5ms**

7) OFF COND. Is set to: Delay output

8) FALSE HoldT: **5ms**


8 Analog Parameter

GMT-X4 provides four analog output channels. Each channel provides one analog output channel. For details about analog port connections, see Chapter 3.7. The analog parameters corresponding to CH 1 to 4 are as follows:

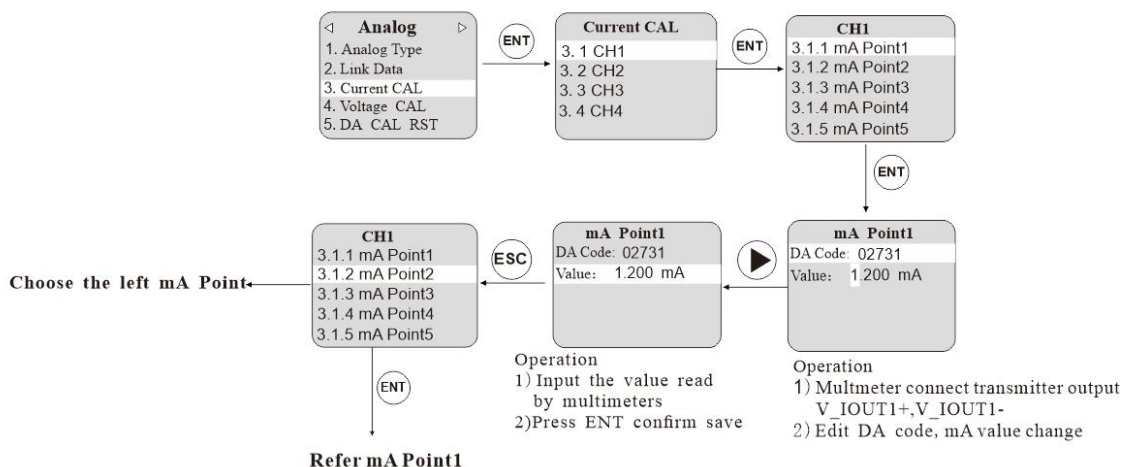
8.1 Analog parameter description

Parameter	Initial value	
1. Analog output mode	4-20mA	range: 4-20mA, 0-20mA, 0-24mA, 0-5V, 0-10V
2. Analog associated variable	Current weight	range: Current weight, NW, GW. Analog correspond to the weight form
3. Analog mA CAL	Detail operation refer to 8.2 analog calibration	
4. Analog Volt CAL		
5. Analog PARA reset	/	current analog para reset to factory setting value

8.2 Analog calibration

Analog Output mode can choose current/voltage. In the normal display state, you can press  to view the analog output values of the four channels. The format is X.XXmA/V.

The output of analog quantity has been calibrated before delivery, so the user does not need to calibrate the output of analog quantity. If the output of analog quantity is abnormal, the user can calibrate the analog quantity by himself. The current and voltage calibration methods are the same. Here, the current calibration of CH1 is taken as an example (it is recommended to calibrate under the guidance of professionals):



9. Communication

GMT-X4 has various communication function interfaces : **COM-1 (RS485)** , **COM-2(RS232)**, **Ethernet-IP**, (support TCP, PN bus functions)

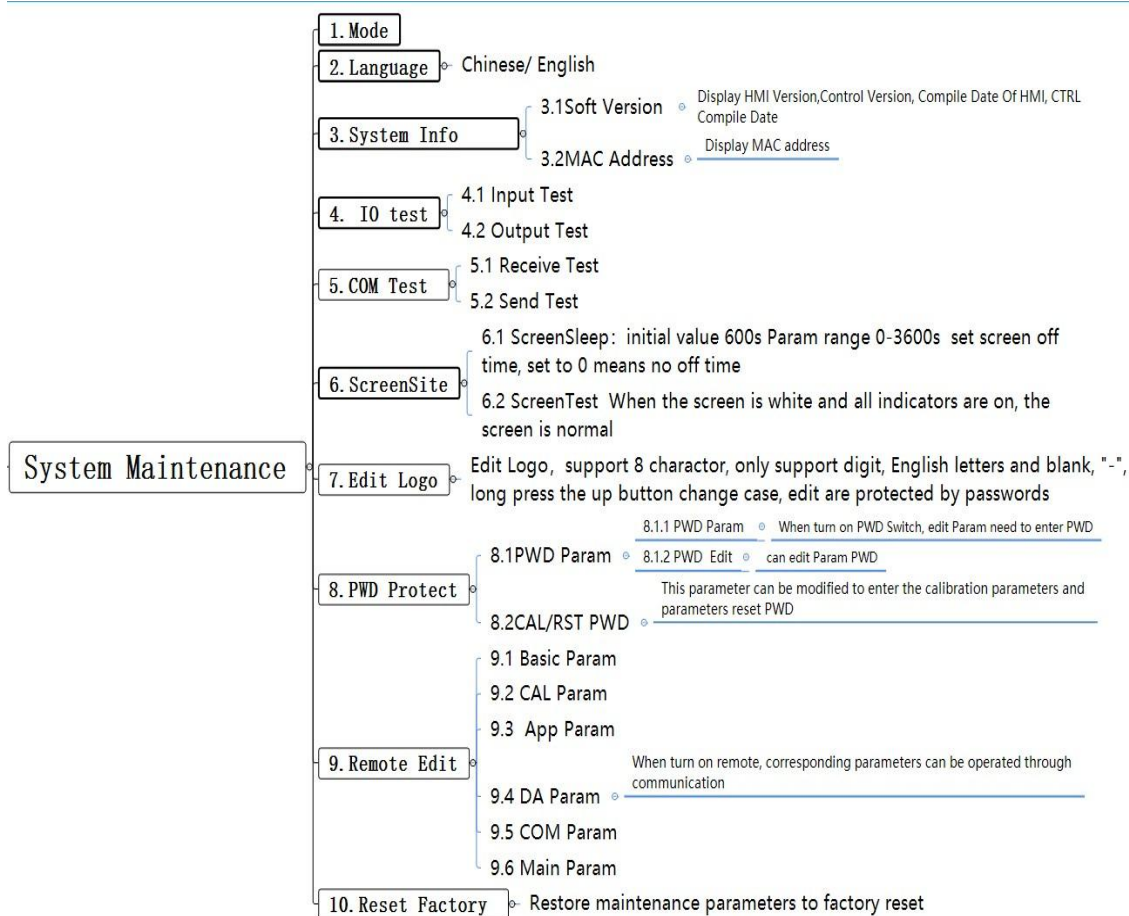
9.1 Communication PARA transmitters

Initial value		Specification
COM-1/2 parameter		
COM ID	01	Range: 01-99
Baudrate	38400	Range: 4800, 9600, 19200, 38400, 57600, 115200
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 support 8 data bits
Dword Format	AB-CD	Range: AB-CD (Hi_low), CD-AB (Low_Hi)
Send Gap	20ms	Under continuous transmission protocol, the time interval between frames. Range 0-5000ms , default value: 20ms
CAN OPEN parameter		
CAN COM ID	01	Range: 1-127
Baudrate	250K	Range: 100K, 125K, 250K, 500K, 1000K
Report frame format	Extended frame	Option: standard frame, Extended frame
Report frame content	Weight	Option: weight, Volt
Report Gap	20ms	Range: 0-5000ms
TCP-IP parameter		
IP Config	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
Communication gateway	192.168.000.001	Range: 000.000.000.000-255.255.255.255
Connect1	Socket No.	502 Range : 1-65535 , set the network communication socket No., 0 close the connection
	Protocol	Modbus/TCP Standard network can set, Range include: protocol include: Modbus/TCP, GM-Cont/TCP
	Dword Format	Range: AB CD, CD AB ; Standard network can set, Hi-Lo byte mode, when protocol is Modbus/TCP use
	Send	20ms When protocol is GM-Cont , this parameter is used

GM1-X4 user's manual

	Gap		for send gap time. Range: 0-5000ms
Connect 2~connect 6	Socket No. defaule value is 0 , other parameter refer connect 1's communicate parameter		
Profinet			
IP Config	192.168.000.101	Range: 0.0.0.0~255.255.255.255	
Write Switch	OFF	Range : OFF, ON ; (When choose PN attached plate ,this parameter can see) ON : PN 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 communicate, transmitter parameter not control by main site”module parameter”	
Data type	Floating point weight	PLC display type choose switch. Range: intergral weight, floating weight, floating volt	
EtherCAT			
Write Switch	OFF	Option: OFF, ON. When turn on non cyclical parameter can write in	
Site alias	0	Range: 0-65535	
Communicate parameter reset			
This parameter is used to restore communication parameters to factory settings. Enter this parameter when resetting communication parameters. CAL/RST PWD, default: 000000 . Can revise PWD in this way 【Maintenance】 -- 【PWD Protect】 -- 【CAL/RST PWD】			

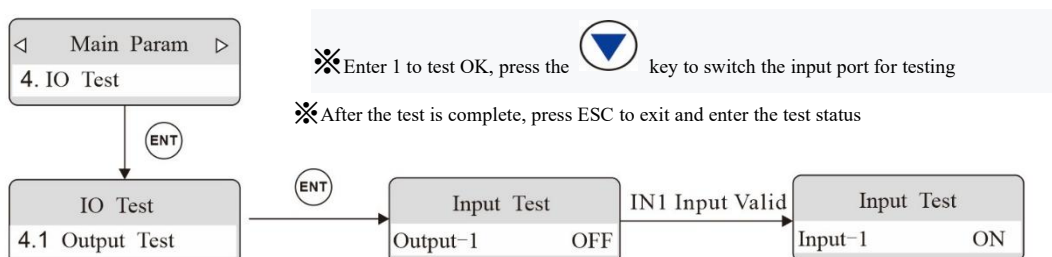
10. Maintenance



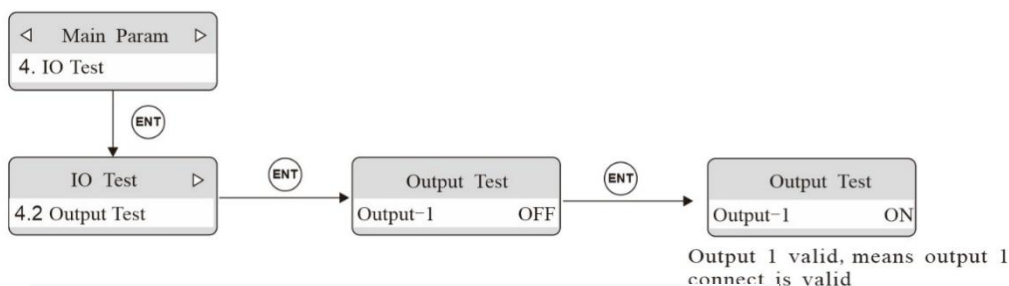
10.1 IO Test

IO The test function is used to test whether the connection state of the input/output outlet 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.

10.2 Serial Port Test

Serial port test function, in a fixed baud rate (9600), data format (8-N-1) to send and receive data, to detect the serial port connection status.

10.2.1 Receive test: The external sends test data (ASCII code only) to the transmitter and displays the data on the display. The data length of each frame cannot exceed 10 bytes.

If the external sends 30 31 41 to the transmitter and the transmitter displays as shown in the figure below, then the **COM-485** connection is normal. COM-232 is the same method



10.2.2 Send Test: Send data "COMx Test nnn". If is **COM-485** then X=1, if is **COM-232** then X=2

11. Communication protocol and address

11.1 Modbus protocol

11.1.1 Function code and exception code description

Function code

Function code	Item	Specification
03	Read register	A maximum of 125 registers can be read at a time
06	Write a single register	
16	Write multiple registers	This transmitter command only supports writing to the double register. When writing, the address must be aligned. It is not allowed to write only part of the double register.
01	Read the coil	Note that this length is in bits.
05	Write the coil	

Note: Only supports above Modbus function codes. When sending other function codes the transmitter will not respond.

Exception Code Respond

Code	Item	Specification
02	Illegal data address	This error code indicates that the data address received is not allowed.
03	Illegal data value	The data written is not in the allowed range.
04	Computer	An unrecoverable error occurred while the transmitter was attempting to perform the requested operation.
07	Unsuccessful programming request	For the transmitter, the command received cannot be executed under the current conditions.

11.1.2 Communication 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 data sheet

For details, refer to [Appendix 1](#)

11.2 GM-Cont

GMT-X4 when COM Protocol is “GM-Cont” ,send data according below format.

		CH1			CH2	CH3	CH4			
STX	Scale No.	state1	state2	weight value	Each take up 8 byte, refer CH1 Data Format			CRC	CR	LF
02H	2 byte	1 byte	1 byte	6 byte				2byte	0D	0A

Among:

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

state1—1 byte, format as below:

bit7	bit6	bit5	bit4		bit3	bit2		bit1	bit0
Fix 0			g	0	0	0	0	0	0
			Kg	0	1	0.0	0	0	1
			t	1	0	0.00	0	1	0
			Lb	1	1	0.000	0	1	1
						0.0000	1	0	0
			Weight Unit			Decimal			

state2—1byte, format as below:

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

CH2, CH3, CH4—Data Format and CH1 are same, details please refer to CH1;

weight value—6 byte no direct data; Returns "blank space OFL space" when weight is positive (negative) overflow.;

CRC—2 byte, Cal and

All the values in front of the check bits are added up and converted to decimal data, and then the last two bits are converted to ASCII (tens before, ones after) For example

For example below frame 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

The sum of 02~20: 5EF (Hex), converted to decimal as 1519. It can be calculated that the check codes of this data frame are 31 and 39.

Example:

The current transmitter automatically returns 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

The current transmitter state is stable: **CH1 in gross weight**, STAB state, the weight value is positive, and the current weight value is **700g**,

CH2 is NET, STAB state, weight value is +, currentweight value is **20.0kg**, **CH3** is gross weight, STAB state, weight value is -, currentweight value is **-30.00t**, **CH4** is-OFL state, display **OFL**.

11.3 CAN OPEN Protocol

- 1) Support **100K, 125K, 250K, 500K, 1000K** bus speed, can set in the "CAN OPEN" parameter of communication parameters.
- 2) There are two different frame formats, mainly the length of the identifier field is different, with 11 bit identifier (ID) is the standard frame, and with 29 bit identifier is the extended frame. The frame format is detailed in the following table:

11.3.1 Standard frame active report data format

11bits frame ID	bit10	address	Local device address(1~127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	10: active report weight; 11 active report voltage
	bit2		
	bit1	reserved (fix 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	Below status valid is 1 D7: ADC Fault D6: Load cell short circuit D5: load cell OFL D4: weight OFL D3: effective theoretical value D2: display NW D1: stable D0: ZERO
	Byte2	channel No.	current data frame channel No.(0-3)
Word 0	Byte1	reserved	fix 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	Fix 01: read parameter
	bit2		
	bit1	frame direction	Fix 0: from host to COM ID
	bit0	Data type	0: word(2byte); 1: Dword(4byte)
Data format			
Word 3	Byte7	0	
	Byte6		
Word 2	Byte5	0	
	Byte4		
Word 1	Byte3	0	
	Byte2		
Word 0	Byte1	read address	
	Byte0		

Read back to result data format

11bits frame ID	bit10	address	local device address (1~127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fix 01: read parameter
	bit2		
	bit1	frame direction	Fix 0: from host to COM ID
	bit0	data type	0: word (2byte); 1: Dword(4byte)
Back to data format			
Word 3	Byte7	Back to data	read Dword Lo word CD part or read word
	Byte6		
Word 2	Byte5		Read Dword Hi word AB part
	Byte4		
Word 1	Byte3		Operation result: 0 OK, 1 address error, 2 data unconscionable
	Byte2		
Word 0	Byte1		read address
	Byte0		

11.3.3 Standard frame write in data format

11bits frame ID	bit10	address	target device address
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	Frame function	Fix 00: parameter write in
	bit2		
	bit1	frame direction	Fix 0: from Host to COM ID
	bit0	data type	0: Word(2byte); 1: Dword(4byte)
Data			
Word 3	Byte7	write in parameter contents	write in Dword Lo-word CD or word content
	Byte6		
Word 2	Byte5		write in Dword Hi word AB
	Byte4		
Word 1	Byte3		0
	Byte2		
Word 0	Byte1		write in address
	Byte0		

Write in back to result data format

11bits frame ID	bit10	address	local device address (1~127)
	bit9		
	bit8		
	bit7		
	bit6		
	bit5		
	bit4		
	bit3	frame function	Fix 00: parameter write in
	bit2		
	bit1	frame direction	Fix 1: From COM ID to Host
	bit0	data type	0: word (2byte); 1: Dword(4byte)
Back to data format			
Word 3	Byte7		write in Dword CD or word content
	Byte6		
Word 2	Byte5		write in Dword AB
	Byte4		
Word 1	Byte3		Operative result: 0 sucess, 1 address error , 2 data unresonable
	Byte2		
Word 0	Byte1		Write in address
	Byte0		

11.3.3 The extended frame actively reports the data format

29 bits frame ID	bit28	address	local device address (1~127)
	bit27		
	bit26		
	bit25		
	bit24		
	bit23		
	bit22		
	bit21	frame function	10: active report weight; 11 active report volt
	bit20		
	bit19	frame direction	Fix 1: From COM ID to Host
	bit18	report content	00: report data (CH 1, 2)
	bit17		01: report data (CH 3, 4)
	bit16	reserved	Fix 0
	bit15	CH(1,3) data state	below state valid is 1
	bit14		bit15: ADC error
	bit13		bit14: load cell short circuit
	bit12		bit13: load cell OFL
	bit11		bit12: weight OFL
	bit10		bit11: theory valid
	bit9		bit10: display NW
	bit8		bit9: stable
	bit7	CH(2,4) data state	below state valid is 1
	bit6		bit7: ADC error
	bit5		bit6: load cell short circuit
	bit4		bit5: load cell OFL
	bit3		bit4: weight OFL
	bit2		bit3: theory valid
	bit1		bit2: display NW
	bit0		bit1: stable
Data			
Word 0	Byte7	CH (1,3) weight data	The returned data is a hexadecimal number, a 32-bit integer signed number, data Hi-Lo. When OFL and –OFL, the weight data is 9999999 and -9999999. If it is a voltage value, the voltage value has 3 decimal places by default
	Byte6		
Word 1	Byte5	CH (2,4) weight data	
	Byte4		
Word 2	Byte3		
	Byte2		
Word 3	Byte1		
	Byte0		

11.4 PROFINET COMM

GMT-X4 display has two **PROFINET-IO** bus connect port: **LAN1** and **LAN2**, can

connect to the PROFINET bus as a Profinet-IO slave station..

Transmitter IP address please check at **【COMM PARA】** -- **【Profinet】**: MAC address please check at **【Maintenance】** -- **【system info】** .

11.4.1 IO state

GMT-X4 provides 36 byte IO, the master station can read and control the status of the weighing display.

10.7.1.1 PN cyclic PARA IO module address

Deviation	PARA	Data type	PARA Specification
weight and state PARA (read register, I address)			
CH1			
0	Current Display weight/ Volt	DWord	Currently displayed weight integer/weight floating-point (depending on the PN parameter data type), default display floating-point weight.
4	Weight state marker bit	Word	D15: communication heartbeat, (After the connection is established, the value of the PN's communication heartbeat is converted between 0 and 1 at a frequency of 1 Hz)
			D14: write state, (write data return state 0:no error 1: register address illegal 2: parameter error)
			D12-D13: reserved
			D11: Use theory value calculate weight, (Use theory value calculate weight prompt user)
			D10: ADC fault, (ADC initialization failure or sampling interruption longer than expected)
			D9: Net weight of the current display, (distinguish which weight is currently displayed)
			D8: mV STAB, (mark of million volt stability in calibration)
			D7: load cell-OFL, lower load cell mV allow Range
			D6: load cell OFL, Over load cellmV allow Range
			D5: weight –OFL, weight < “-(Full Scale +9d) ”
			D4: weight OFL, weight > “ Full Scale +9d”
			D3: OFL state, (weight or load cell abnormal)
			D2: display weight -, (display weight is -)
			D1: ZERO, (weight is in 0+/- 1/4d Range)
			D0: STAB
6	error code 1	Word	D15: calibrate state (0:normal; 1: calibrate fail)
			D14: calibrating unstable, waiting till stable
			D13: The remote tare operation permit switch is not enabled when the tare is operated remotely
			D12: NETstate does not allow TARE
			D11: When tare, the weight is negative
			D10: ZERO, load cell OFL

			D09: ZERO, load cell-OFL
			D08: ZERO,no STAB
			D07: NETstate not allow ZERO
			D06: The remote reset switch is not turned on during remote reset
			D05: ZERO, load cell OFL
			D04: ZERO, load cell-OFL
			D03: ZERO,no STAB
			D02: ZERO over Range
			D01: power on.ZERO no STAB
			D00: power on ZERO over Range
CH2			
8	Current display weight	DWord	Currently displayed weight integer/weight floating-point (depending on the PN parameter data type), default display floating-point weight.
12	State byte	Word	Refer CH1 state byte (Note: differ with CH1, D14-D15 are reserved)
14	error code 2	Word	Refer CH1 error code 1
CH3			
16	Current display weight	DWord	Currently displayed weight integer/weight floating-point (depending on the PN parameter data type), default display floating-point weight.
20	State byte	Word	Refer CH1 state byte (Note: differ with CH1, D14-D15 are reserved)
22	error code 3	Word	Refer CH1error code 1
CH4			
24	currentdisplay weight	DWord	Currently displayed weight integer/weight floating-point (depending on the PN parameter data type), default display floating-point weight.
28	State byte	Word	Refer CH1 state byte (Note: differ with CH1, D14-D15 are reserved)
30	error code4	Word	Refer CH1error code 1
32	read out value	DWord	The value obtained by writing the address to read
function Operate and PARA modify (writeregister, Q address)			
0	CH1 function Operate	Byte	D5-D7 Reserve
			D4: CAL ZERO 10
			D3: GROSS/NET 8
			D2: clear tare 4
			D1: TARE 2
			D0: ZERO 1
1	CH2 function Operate	Byte	Refer CH1 function Operate
2	CH3 function Operate	Byte	Refer CH1 function Operate
3	CH4 function Operate	Byte	Refer CH1 function Operate

4	Write value address	DWord	write value address (Note: address change will not write in) This PARA modify connect port module support MODBUS address range limit 200-1187
8	Write value	DWord	Write value (Note: only when value change will write in transmitter)
12	Read address	DWord	Read address (Note: Can't read DWord address, when write an odd address) This PARA modify connect port module support MODBUS addressRange limit 200-1187

11.4.1.2 PN non cycle PARA list

Module	PARA items	Initial value	PARA Specification
CH1~CH4 CAL and ON/OFF PARA	power on AUTO ZERO	0	Range: 0~99 (full scale percentage)
	TrZero Range	1	0~9d
	STAB Range	1	0~99d
	ZERO Range	20%	0%-99%
	Digit-Filter PARA	4	0~9
	Digit-Filter level	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	transmitter value division value Range: 1, 2, 5, 10, 20, 50, 100, 200, 500
	Full Scale	10000	transmitter full scale, normally take load cell full scale. Range : Division*200000 settable. When over fill scale ("data over range") prompt info, avoid weighing over pressure damage load cell.

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 General Measure Technology Co., Ltd. (www.gmweighing.com).

11.5 EtherCAT communication

The GMT-X4 display has two bus connection ports: LAN1 and LAN2, with LAN2 serving as the entry when EtherCAT is connected. Any computer with a network interface card and any embedded device with Ethernet control can serve as a master station for EtherCAT, such as devices such as Huichuan PLC. It is also possible to connect to the transmitter through Twincat software on a PC computer, in any case within the same LAN as the transmitter. The following parameter table can be used after the connection is successful.

11.5.1 Simplified parameter address

EtherCAT cycle parameter list

Data type	Parameter	Description
Parameter write address, write only		
UDint	CH1~CH4 function operate (each CH takes 8 byte)	D5-D7: reserved D4: calibrate Zero D3: GS/NT D2: CLEAR TARE D1: TARE D0: ZERO
UDINT	address of value to write	address of value to write (Note if address change "value to write" is written to the changed address) This PARA modify connect port module support MODBUS address range limit 200-1187
UDINT	value to write	value to write (Note that if the value changes, the value is written to the address of the transmitter corresponding to the value to be written)
UDINT	address to read	address to read (Note can't write a word address when reading Dword address) This PARA modify connect port module support MODBUS address range limit 200-1187
PARA read address, read only		
REAL	CH1 weight	current display weight, floating point type
UINT	CH1 weight state byte	D15: communication heartbeat , (After the connection is established, the value of the PN's communication heartbeat is converted between 0 and 1 at a frequency of 1 Hz) D14: write state, (write data return state 0:no error 1: PARA error) D12-D13: reserved D11: Calculate the weight using theoretical values, (Prompt the user when calculating weight using theoretical values) D10: ADC fault, (ADC initialization failed or sampling interrupted longer than expected) D9: current display NW, (Distinguish which weight is currently displayed) D8: mV STAB, (Millivolt stability marker during calibration) D7: load cell -OFL, lower load cell volt allow range D6: load cell OFL, over load cell volt allow range D5: Weight -OFL, weight lower "-(full range+9d)" D4: Weight OFL, weight over "full range+9d" D3: OFL state, (weight or load cell fault) D2: display weight-, (display weight-) D1: ZERO, (weight within 0+/-quarter d range)

		D0: STAB
UINT	CH1 error code	D15: calibrate state (0: normal; 1: calibrate fail) D14: When calibrate is unstable, waiting stable D13: When remote operate TARE, remote TARE operate allow ON/OFF is off D12: When in NW state, do not allow TARE D11: Weight is negative when TARE D10: Load cell OFL when TARE D9: Load cell -OFL when TARE D8: Unstable when TARE D7: NW stable do not allow ZERO D6: Remote ZERO remote ZERO ON/OFF is off D5: Load cell OFL when ZERO D4: Load cell -OFL when ZERO D3: Non Stable when ZERO D2: ZERO over range D1: Non Stable when PWR-On Zero D0: Over Zero Range
REAL	CH 2 weight	Refer above CH1 parameter read address description
UINT	CH 2 weight state byte	
UINT	CH 2 error code	
REAL	CH 3 weight	Refer above CH1 parameter read address description
UINT	CH 3 weight state byte	
UINT	CH 3 error code	
REAL	CH 4 weight	Refer above CH1 parameter read address description
UINT	CH 4 weight state byte	
UINT	CH 4 error code	
DINT	read out value	The value obtained by the address to be read

EtherCAT Non Acyclic Parameter List

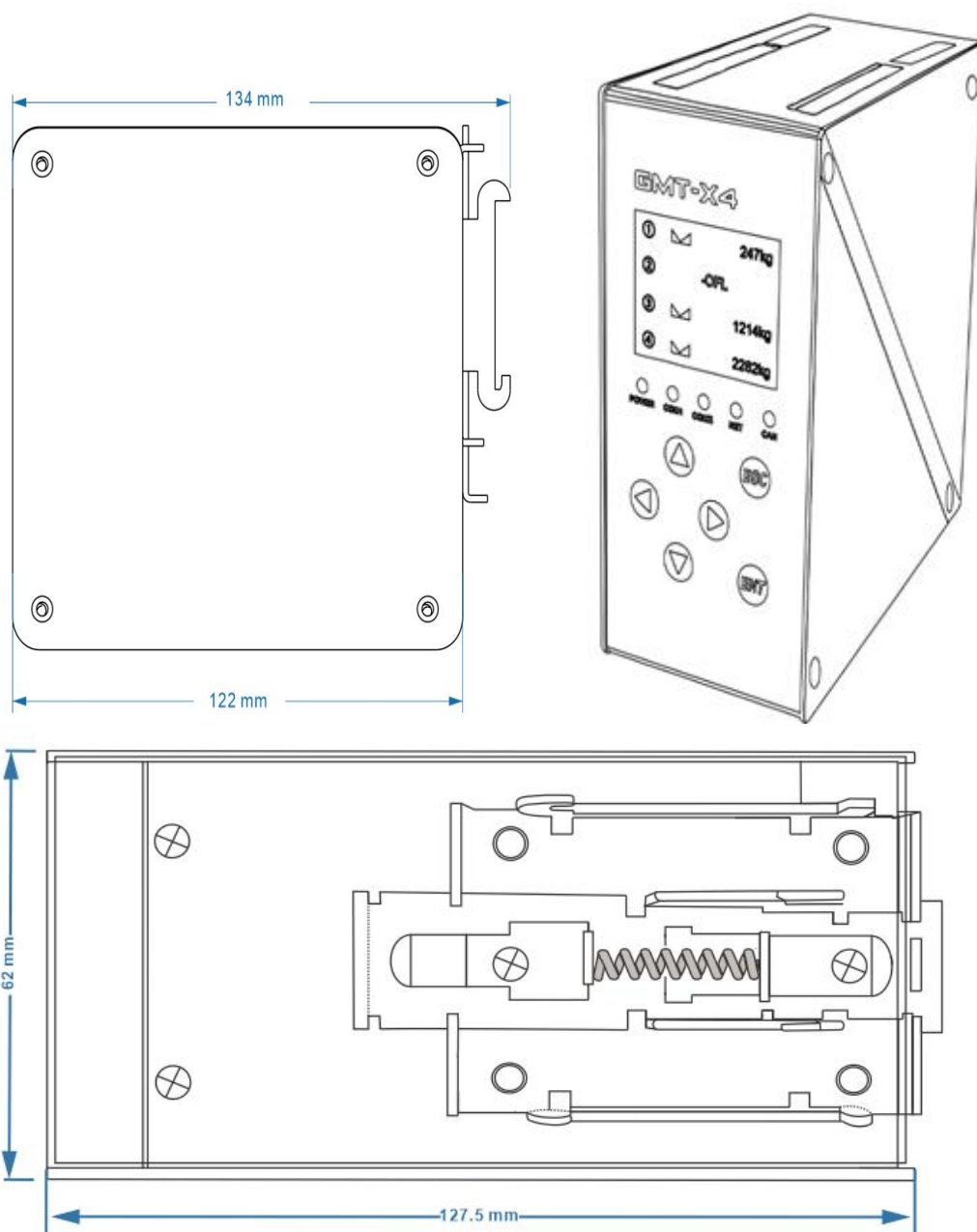
Module	Parameter	Initial value	Parameter description
CH1 calibrate and ON/OFF parameter	Power on Auto ZERO	0	Range: 0~99(× full range %);
	TrZero Range	1	0-99d
	STAB Range	1	0-99d
	Zero Range	20%	1%-99%
	Digit-Filter parameter	4	0-9
	Adv. Filter	0	0-99
	Unit	kg	g, kg, t, lb

	Decimal Point	0	Range: 0; 0.0; 0.00; 0.000; 0.0000
	Division	d=1	Transmitter display value minimum value variation Range: 1, 2, 5, 10, 20, 50, 100, 200, 500
	Full range	10000	Transmitter maximum display value, normally takes load cell full range. Range: Division*200000, set over range (“data over range”) prompt message, avoid damage to the load cell by weighing overpressure.
CH2 calibrate and ON/OFF parameter	Refer to the acyclic parameter of CH1		
CH3 calibrate and ON/OFF parameter	Refer to the acyclic parameter of CH1		
CH4 calibrate and ON/OFF parameter	Refer to the acyclic parameter of CH1		

11.5.2 Device description file ESI

GMT-X4 device description file and connection method can download at Shenzhen General Measure Technology Co., Ltd.'s website (www.gmweighing.com)

11. DIMENSION



Appendix 1

Modbus communication data sheet

PLC Address	Display Address	Specification	Specification
Weight status information PARAttransmitters			
40001-40002	0000-0001	CH1 current display weight value (4-byte signed integer number)	
40003-40004	0002-0003	CH2 current display weight value (4-byte signed integer number)	
40005-40006	0004-0005	CH3 current display weight value (4-byte signed integer number)	
40007-40008	0006-0007	CH4 current display weight value (4-byte signed integer number)	
40009	0008	CH1 weight status signal byte	byte Specification
			D15 Reserved
			D14 Load cell power short circuit(EXn+EXn-short circuit)
			D12-D13 Reserved
			D11 Weight is calculated using theoretical values
			D10 ADC breakdown
			D9 Current display NW
			D8 Million volts stable
			D7 Load cell -overflow
			D6 Load cell +overflow
			D5 Weight -overflow
			D4 Weight +overflow
			D3 Overflow state
			D2 display weight -
			D1 Zero
			D0 stable
40010	0009	CH2 weight status signal byte	Details please refer CH1 weight status signal byte.
40011	0010	CH3 weight status signal byte	Details please refer CH1 weight status signal byte.
40012	0011	CH4 weight status signal byte	Details please refer CH1 weight status signal byte.
40013-40014	0012-0013	CH1gross weight value(4 bytes The number of signed integers)	
40015-40016	0014-0015	CH1 net weight value(4 bytes The number of signed integers)	
40017-40018	0016-0017	CH1 tare value(4 bytes The number of signed integers)	
40019-40020	0018-0019	CH2 gross weight value(4 bytes The number of signed integers)	
40021-40022	0020-0021	CH2 net weight value(4 bytes The number of signed integers)	
40023-40024	0022-0023	CH2 tare value(4 bytes The number of signed integers)	
40025-40026	0024-0025	CH3 gross weight value(4 bytes The number of signed integers)	
40027-40028	0026-0027	CH3 net weight value(4 bytes The number of signed integers)	
40029-40030	0028-0029	CH3 tare value(4 bytes The number of signed integers)	
40031-40032	0030-0031	CH4 gross weight value(4 bytes The number of signed integers)	
40033-40034	0032-0033	CH4 net weight value(4 bytes The number of signed integers)	
40035-40036	0034-0035	CH4 tare value(4 bytes The number of signed integers)	
40037-40038	0036-0037	CH1 display weight value (floating-point type)	
40039-40040	0038-0039	CH1 gross weight value(4-byte signed floating point number)	
40041-40042	0040-0041	CH1 net weight value(4-byte signed floating point number)	
40043-40044	0042-0043	CH1 tare value(4-byte signed floating point number)	
40045-40046	0044-0045	CH2 display weight value (floating-point type)	

GM1-A4 user's manual				
40047-40048	0046-0047	CH2 gross weight value(4-byte signed floating point number)		
40049-40050	0048-0049	CH2 net weight value(4-byte signed floating point number)		
40051-40052	0050-0051	CH2 tare value(4-byte signed floating point number)		
40053-40054	0052-0053	CH3 display weight value (floating-point type)		
40055-40056	0054-0055	CH3 gross weight value(4-byte signed floating point number)		
40057-40058	0056-0057	CH3 net weight value(4-byte signed floating point number)		
40059-40060	0058-0059	CH3 tare value(4-byte signed floating point number)		
40061-40062	0060-0061	CH4 display weight value (floating-point type)		
40063-40064	0062-0063	CH4 gross weight value(4-byte signed floating point number)		
40065-40066	0064-0065	CH4 net weight value(4-byte signed floating point number)		
40067-40068	0066-0067	CH4 tare value(4-byte signed floating point number)		
40069-40070	0068-0069	CH1 after fliter AD internal code	bipolar,-direct data; polar-no direct data	
40071-40072	0070-0071	CH1 load cell voltage value	direct data, integer, Four decimal point	
40073-40074	0072-0073	CH1 relative zero voltage value	direct data, integer, Four decimal point	
40075-40076	0074-0075	CH2 after fliter AD internal code	bipolar -direct data; polar-no direct data	
40077-40078	0076-0077	CH2 load cell voltage value	direct data, integer, Four decimal point	
40079-40080	0078-0079	CH2 relative zero voltage value	direct data, integer, Four decimal point	
40081-40082	0080-0081	CH3 after fliter AD internal code	bipolar -direct data; polar-no direct data	
40083-40084	0082-0083	CH3 load cell voltage value	direct data, integer, Four decimal point	
40085-40086	0084-0085	CH3 relative zero voltage value	direct data, integer, Four decimal point	
40087-40088	0086-0087	CH4 after fliter AD internal code	bipolar -direct data; polar-no direct data	
40089-40090	0088-0089	CH4 load cell voltage value	direct data, integer, Four decimal point	
40091-40092	0090-0091	CH4 relative zero voltage value	direct data, integer, Four decimal point	
40093	0092	Reserve		
40094	0093	Input state area	byte	Specification
			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 state area	byte	Specification
			D8-15	Reserve
			D7	Output 8 state
			D6	Output 7 state
			D5	Output 6 state
			D4	Output 5 state
			D3	Output 4 state
			D2	Output 3 state
			D1	Output 2 state
40097	0096	Flow state symbol byte	D10-D15	Reserve
			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
40098~40140	0097~0139	Reserve		
CH1				
40141	0140	error code 1	D14-15	Reserve
			D13	When CAL unSTAB,waiting STAB
			D12	Remote calibration is performed when remote calibration is prohibited
			D11	Reserve
			D10	The previous weight point is not calibrated
			D9	Beyond minimum resolution
			D8	Weight input exceeds the maximum range
			D7	weight input can't be 0
			D6	weight CAL less than ZERO or the previous CP
			D5	weight CAL load cell OFL
			D4	weight CAL load cell-OFL
			D3	weight CAL unSTAB
			D2	ZERO CAL load cell OFL
			D1	ZERO CAL load cell-OFL
			D0	ZERO CAL unSTAB
40142	0141	error code 2	D15	When calibrate fail is 1
			D14	Reserve
			D13	Remote tare operation is not ON. Remote tare operation is allowed to be ON/OFF
			D12	Fobid Tare
			D11	Tare Err
			D10	OFL When Tare
			D9	-OFL When Tare
			D8	Non Stable
			D7	NET state not allow ZERO
			D6	Remote ZERO ON/OFF is not ON for remote ZERO
			D5	Loadcell Over
			D4	Loadcell Under
			D3	Non Stable
			D2	Over Full Scale
			D1	power on ZERO unSTAB
D0	power on ZERO over range			
40144~40155	0143~0154	Reserve		
CH2				
40156	0155	error code1	Refer CH1 error code1	
40157	0156	error code2	Refer CH1 error code2	
40158~40170	0157~0169	Reserve		
CH3				
40171	0170	error code 1	Refer CH1 error code1	
40172	0171	error code 2	Refer CH1 error code2	

40173~40185	0172~0184	Reserve	
CH4			
40186	0185	error code 1	Refer CH1 error code1
40187	0186	error code 2	Refer CH1 error code2
40188~40200	0187~0199	Reserve	
basic PARA zero, can read / write			
CH1			
40201	0200	Power 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
40202	0201	Remote ZERO ON/OFF	Range: 0 (OFF), 1 (ON); Initial value: 1 (ON)
40203	0202	ZERO Range	Full scale 1%-99% , Initial value: 20%
40204	0203	Remote Tare	Range: 0 (OFF), 1 (ON); Initial value: 1 (ON)
40205	0204	Tare Record	Range: 0 (OFF), 1 (ON); Initial value: 0 (OFF)
40206	0205	NetSign COR	Range: 0 (Disable), 1 (CorrectTare), 2 (BackToGross); Initial value: 0 (OFF)
40207	0206	Preset Tare	Range: 0 ~ full scale Initial value: 0 , write in tare, read out current tare
40208	0207	STAB Range	Range: 0-99d , Initial value: 1
40209	0208	STAB Timer	Range: 1-5000 msec, Initial value: 1000
40210	0209	TrZero Range	Range: 0-99d , Initial value: 1
40211	0210	TrZero Timer	Range: 1-5000 msec, Initial value: 1000
40212	0211	Digit-Filter	Range: 0-9 , Initial value: 4
40213	0212	Adv. Filter	Range: 0-99d , Initial value: 0
40214	0213	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: 4-200Hz
40215	0214	Signal Range	Range: 0-5 (0: 0-5mV; 1: 0-10mV; 2: 0-15mV,) Initial value: 1 (0-10mV)
40216~40300	0215~0299	Reserve	
CH2			
40301~40315	0300~0314	Refer CH1 PARA zero	
40316~40400	0315~0399	Reserve	
CH3			
40401~40415	0400~0414	Refer CH1 PARA zero	
40416~40500	0415~0499	Reserve	
CH4			
40501~40515	0500~0514	Refer CH1 PARA zero	
40516~40600	0515~0599	Reserve	
CAL PARA zero, can read / write			
CH1			
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, 1-0.0, 2-0.00, 3-0.000, 4-0.0000 ; Initial value : 0
40605~40606	0604~0605	Division	Range: 1, 2, 5, 10, 20, 50, 100, 200, 500
40607~40608	0606~0607	Full Scale	Range: 0 -Division* 200000 , Initial value : 10000
40609~40610	0608~0609	AUTO ZERO CAL	Only write in1 ; write in1, ZERO calibrates the current state read: load cell current mV. Fixed 4byte decimal

			point
40611-40612	0610-0611	KEY ZERO CAL	Range: 0-150000 ; write inmV; read current ZERO mV
40613-40614	0612-0613	CP1	write in weight value CALweight point 1
40615-40616	0614-0615	CP2	write in weight value CALweight point 2
40617-40618	0616-0617	CP3	write in weight value CALweight point 3
40619-40620	0618-0619	CP4	write in weight value CALweight point 4
40621-40622	0620-0621	CP5	write in weight value CALweight point 5
			read out CP relative mV
40623-40624	0622-0623	LC mV/V	Write the actual sensitivity of the load cell for the theoretical value calibration , Range : 0.0000-3.9999 , default: 2.0000
40625-40626	0624-0625	LC Capacity	Write the total range of the load cell for theoretical calibration, Range: 0-999999 , default: 10000
40627-40628	0626-0627	Use T-CAL	Write 1 to enable theoretical value calibration, write 0 to use calibration data
40629-40630	0628-0629	Correct Coef	Write the coefficient to modify the calibration, write the data integer type, the system default data write data with 5 decimal point
40631~40700	0630~0699	Reserve	
CH2			
40701-40730	0700-0729	Refer CH1 CAL PARA zero	
40731~0800	0730~0799	Reserve	
CH3			
40801-40830	0800-0829	Refer CH1 CAL PARA zero	
40831~40899	0830~0899	Reserve	
CH4			
40901-40930	0900-0929	Refer CH1 CAL PARA zero	
40930~41000	0930~0999	Reserve	
Application zero, read-write, otherwise read only			
41001-41002	1000-1001	input1 function	default: 0 ; Indep Mode mode: PARARange: 0-21 , 0-NONE , 1-CH1ZERO , 2-CH2 ZERO , 3-CH3 ZERO , 4-CH4 ZERO , 5-CH1 CAL-ZERO , 6-CH2 CAL-ZERO , 7-CH3 CAL-ZERO , 8-CH4 CAL-ZERO , 9-CH1 TARE , 10-CH2 TARE , 11-CH3 TARE , 12-CH4 TARE , 13-CH1clear tare , 14-CH2clear tare , 15-CH3clear tare , 16-CH4clear tare , 17-CH1 GROSS/NET , 18-CH2 GROSS/NET , 19-CH3 GROSS/NET , 20-CH4 GROSS/NET , 21- COMP-ON combo mode: PARARange: 0-6 , 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	PARA Range: 0-200ms , Initial value: 5ms ,
41005-41006	1004-1005	Input 2 function	Refer input1 functionSpecification
41007-41008	1006-1007	Input 2 delay	Refer input1 delaySpecification
41009-41010	1008-1009	Input 3 function	Refer input1 functionSpecification
41011-41012	1010-1011	Input 3 delay	Refer input1 delaySpecification

41013-41014	1012-1013	Input 4 function	Refer input1 functionSpecification
41015-41016	1014-1015	Input 4 delay	Refer input1 delaySpecification
41017-41030	1016-1029	Reserve	
41031-41032	1030-1031	Output 1 function	default: 0 ; PARA Range 0-24 , correspond: 0 : NONE; 1-8 : COMP1- 8 ; 9-12 : CH1 STAB, CH2 STAB, CH3 STAB, CH4 STAB; 13-16 : CH1 ZERO, CH2 ZERO, CH3 ZERO, CH4 ZERO; 17-20 : CH1 NET, CH2 NET, CH3 NET, CH4 NET; 21-24 : CH1 -SIGN,CH2 -SIGN,CH3 -SIGN,CH4 -SIGN
41033-41034	1032-1033	Output 2 function	Refer 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	
41047-41060	1046-1059	Reserve	
41061-41062	1060-1061	COMP1-COMPCH	Initial value: 0 ; Indep Mode with which CH process COMP: 0 -CH1, 1 -CH2, 2 -CH3, 3 -CH4
41063-41064	1062-1063	COMP 1-COMP mode	Initial value: 1 -weight \leq ; When in COMP mode: PARA Range: 0-6 , 0 -OFF, 1 -weight \leq , 2 -weight =, 3 -weight \neq , 4 -weight \geq , 5 -weight $<>$, 6 -weight \times
41065-41066	1064-1065	COMP 1-COMP value 1	Initial value: 0 ; COMP value1, direct data, Range-999999-999999
41067-41068	1066-1067	COMP1-COMP value2	Initial value: 0 ; COMP value2, direct data, Range-999999-999999, $>$ COMP value 1;
41069-41070	1068-1069	COMP1-ON mode	Initial value: 0 - output; Range: 0-2 , : 0 - output, 1 -weight after STAB output, 2 -delay mode;
41071-41072	1070-1071	COMP1-ON JudgeT	Min JudgeT, Initial value: 1000ms , Range: 0-50000ms ;
41073-41074	1072-1073	COMP1-FALSE mode	Initial value: 0 - outputinvalid, Range: 0-2 , : 0 - invalid, 1 -weight after STAB invalid, 2 -delay mode;
41075-41076	1074-1075	COMP1-FALSE JudgeT	Invalid min JudgeT, Initial value: 1000ms ,Range 0-50000ms ;
41077-41092	1076-1091	COMP 2 PARA	Refer COMP1 PARA Specification
41093-41108	1092-1107	COMP 3 PARA	
41109-41124	1108-1123	COMP 4 PARA	
41125-41140	1124-1139	COMP 5 PARA	
41141-41156	1140-1155	COMP 6 PARA	
41157-41172	1156-1171	COMP 7 PARA	
41173-41188	1172-1187	COMP 8 PARA	
41189-41300	1188-1299	Reserve	

COMM PARA set zero, read-write, otherwise read only			
RS485 PARA			
48001	8000	COM ID	Initial value: 1; Range: 01-99
48002	8001	Baudrate	Initial value: 3-38400, Range: 0-5; 0-4800, 1-9600, 2-19200, 3-38400, 4-57600, 5-115200
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 support 8 byte.
48005	8004	Dword Format	Initial value: 0 (AB-CD) Range: 0-AB-CD, 1-CD-AB
48006	8005	Send Gap	Time interval between frames when sending continuously Initial value: 20ms, Range: 0-5000ms
48007~48020	8006~48019	Reserve	
RS232 PARA			
48021	8020	COM ID	Refer COM0 PARA
48022	8021	Baudrate	
48023	8022	Protocol	
48024	8023	Data Format	
48025	8024	Dword Format	
48026	8025	Send Gap	
48027~48100	8026~8039	Reserve	
CAN OPEN COMM			
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	
TCP, PROFINET, ETHERNET/IP			
48101-48104	8100-8103	IP 1-IP 4	Initial value: 192.168.000.001, order is from part 1 to part 4 IP; Range: 000.000.000.000-255.255.255.255
48105-48108	8104-8107	subnet mask 1- 4	Initial value: 255.255.255.001, order is from part 1 to part 4 IP; Range: 000.000.000.000-255.255.255.255
48109-48112	8108-8111	Gateway 1- 4	Initial value: 192.168.000.001, order is from part 1 to part 4 IP; Range: 000.000.000.000-255.255.255.255
48113	8112	connect 1 Socket No.	Initial value: 502, Range: 1-65535, net COMM port No. set, 0 means OFF should connect
48114	8113	connect 1 Protocol	Standard net can set, Range include: protocols are: 0-Modbus/TCP, 1-GM-Cont/TCP, default 0-Modbus/TCP
48115	8114	connect 1 Dword Format	Standard net can set, Hi_Lo byte mode, Modbus/RTU. 0-AB-CD, 1-CD-AB, default: 0-AB-CD
48116	8115	connect 1 Send Gap	When Protocol is 1-GM-Cont, The PARA is used to set the interval for continuous sending.

			Range:0-5000ms, default value:20ms
48117-48120	8116-8119	connect 2	Except for port number 0, see connection port 1 (register address 8112-8115)
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	PROFINET, writeON/OFF	Initial value: 0: Ban, Range: 0: OFF.; 1: ON
48138	8137	PROFINET data type	Initial value: 1-Floating point weight., range: 0-integer Variable, 1-floating point weight. 2-floating point mV;
48139	8138	EtherCAT Site alias	Initial value: 0; range: 0-65535
48138-48300	8139-8299	Reserve	
I/O test PARA, can read/write, otherwise read only			
48301	8300	test mode	PARA Range: 0-1, 0: exist I/O test mode, 1: enter serial port IO test mode, after test finish must turn OFF, transmitter can enter normal state.
48302	8301	input1 test	read out 0 no input, read out 1 have input. write in any value is invalid, Only in IO test mode is valid
48303	8302	input2 test	
48304	8303	input3 test	
48305	8304	input4 test	
48306-48350	8305-8349	reserve address	
48351	8350	output1 test	Range: 0-1, write in: 0: OFF output, 1: ON output (only under IO test mode is valid), read out current IO state, 0: OFF, 1: ON
48352	8351	output2 test	
48353	8352	output3 test	
48354	8353	output4 test	
48355	8354	output5 test	
48356	8355	output6 test	
48357	8356	output7 test	
48358	8357	output8 test	
48359-48400	8358-8399	Reserve	
analog CAL zero address, can read/write, otherwise read only			
CH 1			
48401	8400	Analog output mode	default: 4; Range: 0: 0-5V, 1: 0-10V, 2: -5-5V, 3: -10-10V, 4: 4-20mA, 5: 0-20mA, 6: 0-24mA
48402-48405	8401-8404	Reserve	
48406	8405	analog associated variable	Range: 0-2, 0: current weight, 1: NW, 2: GW
48407	8406	Enter analog CAL mode	Range: 0-2, write in: 0, exist remote analog CALstate; 1: Remote mA CAL; 2: Remote mV CAL after remote Edit is ON can be used
48408	8407	mA Point1 figure code	Range: 0-65535, write in: Transmitter according write in code output mA. Only under mA CAL mode can be used Range: 0-24000, write in mA value, complete the corresponding point mA CAL. Only use under mA CAL mode.
48409	8408	mA Point1 mA value	
48410	8409	mA Point2 figure code	
48411	8410	mA Point2 mA value	
48412	8411	mA Point3 figure code	
48413	8412	mA Point3 mA value	
48414	8413	mA Point4 figure code	
48415	8414	mA Point4mA value	
48416	8415	mA Point5 figure code	
48417	8416	mA Point5 mA value	

48418	8417	mV Point 1 figure code	Range: 0-65535 , write in: Transmitter according write in code output mV. Only valid mV CAL mode. Range: 0-10000 , write in measure mV value, complete corresponding mV CAL. Only valid in mV CAL mode.
48419	8418	mV Point 1 mV value	
48420	8419	mV Point 2 figure code	
48421	8420	mV Point 2 mV value	
48422	8421	mV Point 3 figure code	
48423	8422	mV Point 3 mV value	
48424	8423	mV Point 4 figure code	
48425	8424	mV Point 4 mV value	
48426	8425	mV Point 5 figure code	
48427	8426	mV Point 5 mV value	
48428	8427	current output analog	CH1 current output analog
48429~48500	8428~8499	Reserved	
CH 2			
48501	8500	Analog output mode	Default: 4; range: 0: 0-5V, 1: 0-10V, 2: -5-5V, 3: -10-10V, 4: 4-20mA, 5: 0-20mA, 6: 0-24mA
48502~48505	8501~8504	Reserved	
48506~48528	8505~8527	Refer CH1 analog CAL para	
48529~48600	8528~8599	Reserved	
CH 3			
48601	8600	Analog output mode	Default: 4; range: 0: 0-5V, 1: 0-10V, 2: -5-5V, 3: -10-10V, 4: 4-20mA, 5: 0-20mA, 6: 0-24mA
48602~48505	8601~8604	Reserved	
48606~48628	8605~8627	Refer CH1 analog CAL para	
48629~48700	8628~8699	Reserved	
CH 4			
48701	8700	Analog output mode	Default: 4; range: 0: 0-5V, 1: 0-10V, 2: -5-5V, 3: -10-10V, 4: 4-20mA, 5: 0-20mA, 6: 0-24mA
48702~48705	8701~8704	Reserved	
48706~48728	8705~8727	Refer CH1 analog CAL para	
48729	8728	CAL point cursor in line	The line of the foreground cursor is transmitted to the background in real time, which is used to measure the analog at the analog at each channel. Write is forbidden
48729~48800	8728~8799	Reserved	
Function operate address zero (correspond coil function), can read/write			
CH 1			
48801	8800	ZERO	Write 1 read out: 0
48802	8801	TARE	
48803	8802	clear tare	
48804	8803	GROSS/NET	
48805	8804	CAL ZERO	
48806~48810	8805~8809	Reserve	
CH 2			
48811~48815	8810~8814	Refer CH1 function operate PARA	
48816~48820	8815~8819	Reserve	
CH 3			
48821~48825	8820~8824	Refer CH1 function operate PARA	
48826~48830	8825~8829	Reserve	
CH 4			
48931~48835	8830~8834	Refer CH1 function operate PARA	
48836~48900	8835~8899	Reserve	
System PARA reset			
CH 1			

48901	8900	basic PARA reset	Write 1 correspond reset operate read out : 0
48902	8901	CAL PARA reset	
48903	8902	analog PARA reset	
48904~48910	8903~8909	Reserve	
CH 2			
48911~48913	8910~8912	Refer CH1 reset PARA	
48914~48920	8913~8919	Reserve	
CH 3			
48821~48923	8920~8922	Refer CH1 reset PARA	
48924~48930	8923~8929	Reserve	
CH 4			
48931~48933	8930~8932	Refer CH1 reset PARA	
48834~48940	8933~8939	Reserve	
48941	8940	Application reset	Write 1 correspond reset operate read out : 0
48942	8941	COMM PARA reset	
48943	8942	all PARA reset	
48944~48980	8943~8979	Reserve	
Power on Logo edit zero, can read/write			
48981~48988	8980~8987	Edit power on logo character 1-8 (8 character)	SN 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
48989~49000	8988~8999	Reserve	
transmitter system info zero, read only zero			
410001	10000	Soft Version (Hi)	
410002	10001	Soft Version (Lo)	If read out 10000 , it is 01.00.00 version
410003	10002	Compile Date (YY)	
410004	10003	Compile Date (MM/DD)	
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	
410031~410100	10030~10099	Reserve	
410101~410106	10100~10105	transmitter MAC address	
410107~410207	101006~10206	Reserve	
Coil address			
Function Operation			
CH1			
0x0001	0000	ZERO	Content can read and write coil write: FF00H = ON 0000H = OFF read: 0001H = ON 0000H = OFF
0x0002	0001	TARE	
0x0003	0002	clear tare	
0x0004	0003	GROSS/NET	
0x0005	0004	CAL ZERO	
0x0006~0x0010	0005~0009	Reserve	
CH 2			
0x0011~0x0015	0010~0014	Refer CH1 function operate PARA	
0x0016~0x0020	0015~0019	Reserve	
CH 3			
0x0021~0x0025	0020~0024	Refer CH1 function operate PARA	
0x0026~0x0030	0025~0029	Reserve	
CH 4			
0x0031~0x0035	0030~0034	Refer CH1 function operate PARA	
0x0036~0x0300	0035~0299	Reserve	
Reset operate			
CH1			
0x0301	0300	basic PARA reset	Zero can only write
0x0302	0301	CAL PARA reset	Write ON reset

0x0303	0302	analog PARA reset	read: 0
0x0304~0x0310	0303~0309	Reserve	
CH 2			
0x0311-0x0313	0310-0312	Refer CH1 reset PARA operate	
0x0314~0x0020	0313~0329	Reserve	
CH 3			
0x0321-0x0323	0320-0322	Refer CH1 reset PARA operate	
0x0324~0x0330	0323~0329	Reserve	
CH 4			
0x0331-0x0333	0330-0332	Refer CH1 reset PARA operate	
0x0334~0x0340	0333~0339	Reserve	
0x0341	0340	Application reset	Write only
0x0342	0341	COMM PARA reset	Write ON reset
0x0343	0342	all PARA reset	read: 0 (Note: reset all PARA, except power on Logo)
0x0344~0x0400	0343~399	Reserve	
IOstate, read only zero			
0x0401	0400	Input 1 state	read only zero read out 返回各input□state byte 0: invalid; 1valid
0x0402	0401	Input 2 state	
0x0403	0402	Input 3 state	
0x0404	0403	Input 4 state	
0x0405~0x0450	0404~0449	Reserve	
0x0451	0450	Output 1 state	read only zero read out back to each output state byte 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 PARA Remote Edit	read only PARA zero, Capture allow Remote Edit?, 1 ON, 0 Ban
0x0502	0501	CAL PARA Remote Edit	
0x0503	0502	Application Remote Edit	
0x0504	0503	analog PARA Remote Edit	
0x0505	0504	Communication PARA remote edit	
0x0506	0505	Maintenance Remote Edit	
0x0507	0506	PARA PWD Protect	