GMT-P1

—PN/EIP/EtherCAT/CCLINK

User's Manual

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Our company reserved the right to update user's manual without additional notice to customers by reason of update, so please visit our website or contact with our service person to get update information.

Website: http://www.gmweighing.com

Product Performance Standards: GB/T 7724—2008

CONTENTS

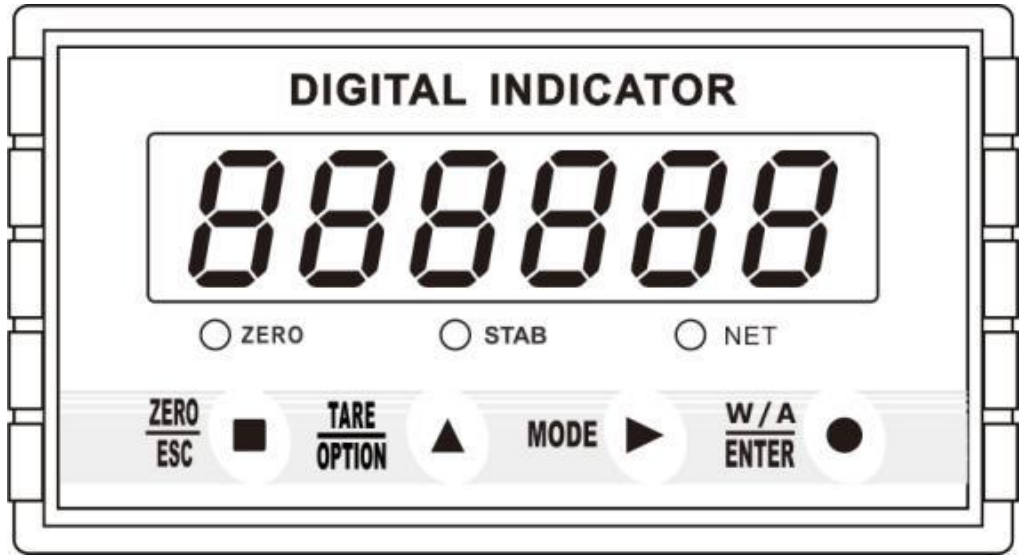
1 General Description

GMT-P1 digital indicator is specially designed for weight transmitting in industrial fields. Support **Profinet,Ethernet IP, EtherCAT,** CCLINK IE.The digital indicator is a small weight display which is specially designed and produced for the occasion of weight transmit industrial. The indicator has the features of compact size, stable performance, simple operation. Can be widely used in: cement mixing and asphalt mixture equipment, metallurgical blast furnace, converter and chemical industry, feed weight control and other occasions.

1.1 Functions and Characteristics

- Small volume, unique design, easy operation
- Applicable to all kinds of resistance strain gauge bridge load cell
- Front panel numerical calibration
- Multilevel of digital filter
- Automatic zero -tracking
- Automatically zero when powered on
- **PROFINET** fieldbus interface
- Support **Ethernet IP** communication, can access **Ethernet IP** network
- Support **EtherCAT** real-time Ethernet technology, high data synchronization accuracy, flexible topology
- Support **CCLINK IE** field infrastructure technology, high-speed and large-capacity field network
- Weight display can be remotely calibrated (remote calibration ON/OFF turned on)

1.2 Front Panel



Main Display: 6 digits, for displaying weight and the information of parameters.
Status Indicator Lamp:

- **ZERO:** Light on when present weight is within 0±1/4d.
- **STAB:** Light on when changes of weight values are within the range of motion detecting during motion detecting time.
- **NET:** Light on when indicator is in gross/net weight status and communication indicator.

Keypad:

ZERO ESC ■:Exit from current operation or go previous. Long press the ZERO button to calibrate the ZERO point function. (Limited by the ZERO clearing range,but it is not limited by calibration lock)

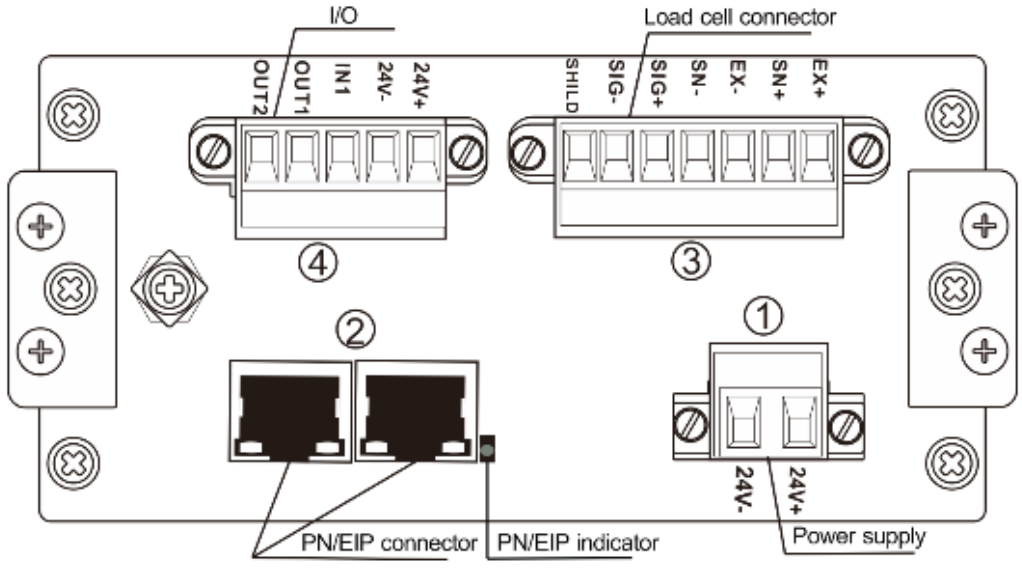
TARE OPTION ▲: Scroll optional values of parameter and to make flashing digit increase 1 while data inputting. Long press Tare key will switch F1.8 parameters,that is,to switch the NET indicator content.

MODE ▶: Function selecting key, make flashing position move to the right digit when data inputting.

W/A ENTER ●: Confirming Key. Confirm setting parameters or calibration and input data.

Note: Under the status of gross weight, user could remove tare by pressing OPTION key. After tare, it automatically switches to the NET weight display, and the NET indicator lights up. In the state of net weight, press ESC to operate tare. In the state of gross weight,press the ESC key is still zeroing.

1.3 Rear Panel



※**PN/EIP/EtherCAT** indicator, light blinks when bus communication normal.

1.4 Technical Specifications

1.4.1 Common

Power supply: **DC24V±5%**
Working temperature: **-10 ~ 40℃**
Max humidity: **90%R.H without dew**

Power consumption: **About 10W**
Dimension: **105×89×57 (mm)**

1.4.2 Analog

Load cell power: **DC5V 200mA (MAX)**
Input impedance: **10MΩ**
Zero steady range: **0.00 ~ 15mV(Load cell 3mV/V)**
Input sensitivity: **0.01uV/d**
Input range: **0.00 ~ 15mV(Load cell 3mV/V)**
Transfer mode: **Sigma - Delta**
A/D conversion speed: **30, 60, 120, 240, 480, 960 times/sec**
Non-linearity: **0.01% F.S**
Gain drift: **10PPM/°C**
Display Precision: **1,000,000d**

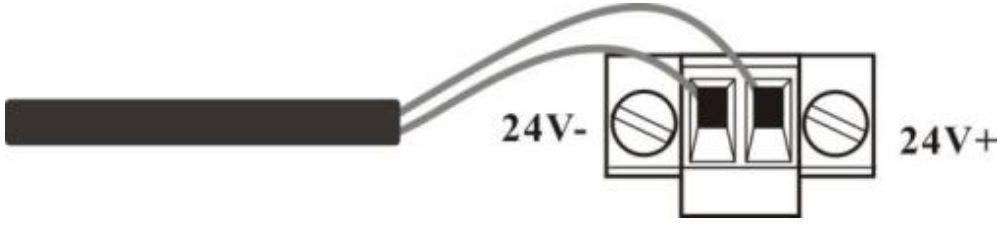
1.4.3 Digital

Weight display: **6 digits red high-brightness LED**
Minus display: "-"
Overload display: **"OFL"**
Decimal point: **5 kinds (optional)**
Function keys: **4 keys sound keypad**

2 Installation and Wiring

2.1 Connection of Power Supply

GMT-P1 digital indicator connects DC24V power supply as follows:



Power supply connection

※ Please pay attention to the positive and negative polarity of the power supply.

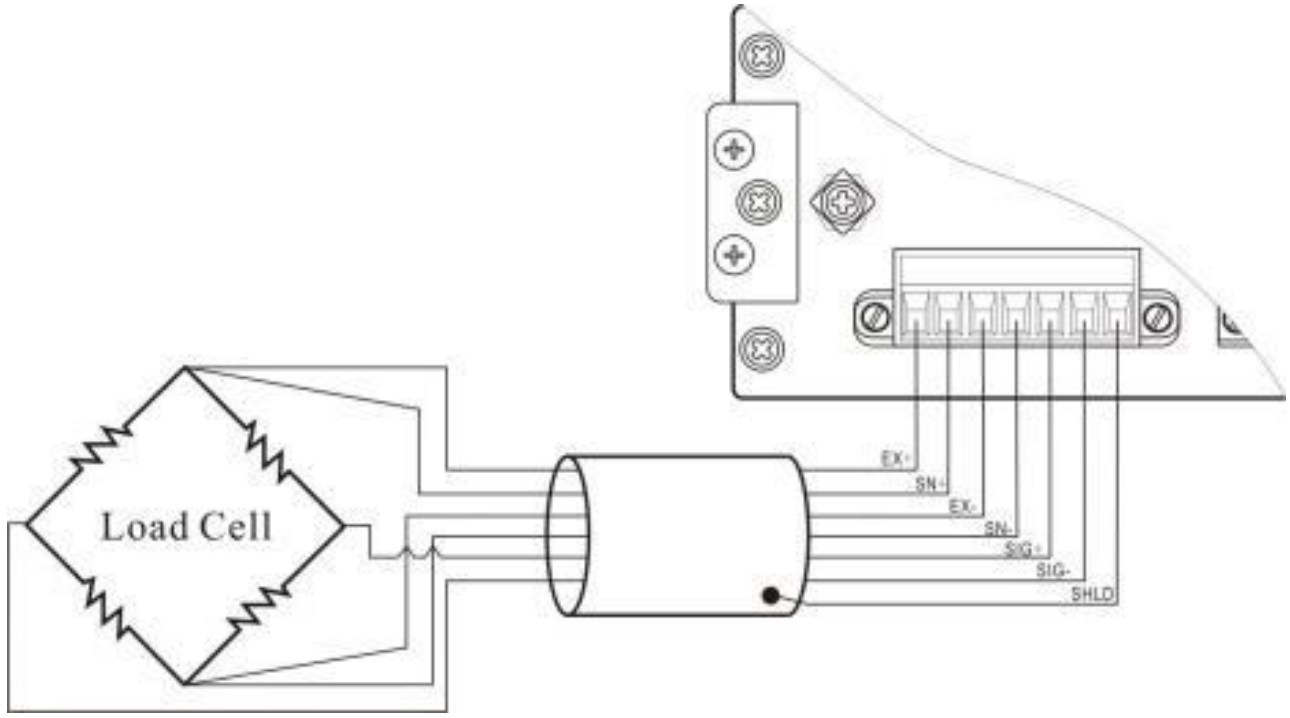
2.2 Connection of Load Cell

GMT-P1 digital indicator connects bridge type resistance strain gauge load cells by 6 wires or 4 wires as follows. When you use 4-wired load cells, you must bridge the SN+ with EX+ and bridge the SN- with EX-.
The signal definition of each port of the load cell connector is as follows:

EX+: Excitation+ **EX-**: Excitation- **SN+**: Sense+ **SN-**: Sense- **SIG+**: Signal+ **SIG-**: Signal-

6 wires	**EX+**	**SN+**	**EX-**	**SN-**	**SIG+**	**SIG-**	**Shield**
4 wires	**EX+**		**EX-**		**SIG+**	**SIG-**	**Shield**

2.2.1 6 wires connection

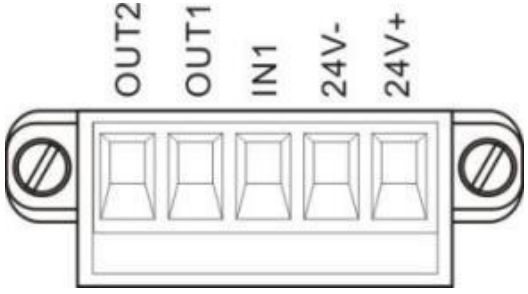


Note:

1. As load cell output sensitive analog signal, please use shield cable to separate with other cables, especially AC power.
2. 4 wires connection is suitable for short distance and stable temperature or low precision field, otherwise use 6 wires connection.
3. For more load cells parallel connection, their sensitivity (mV/V) should be same.

2.3 I/O terminals

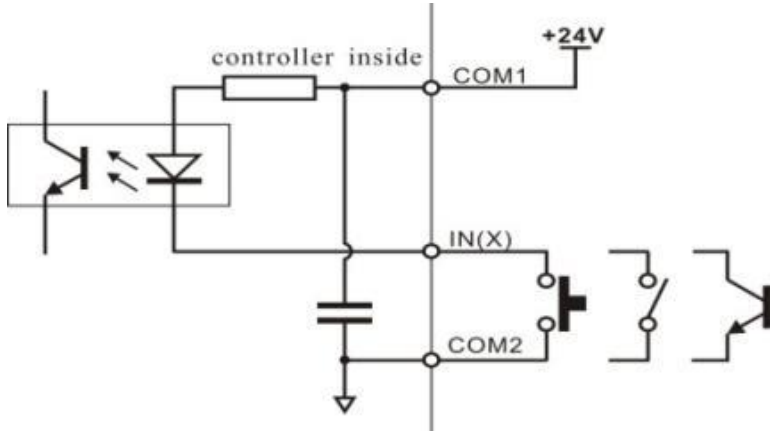
The IO of GMT-P1 weight display can be customized by the user (see Chapter 5 for details) to facilitate user wiring and some special applications. The driving current of each channel is 200mA. When the product leaves the factory, the default definition is as follows.



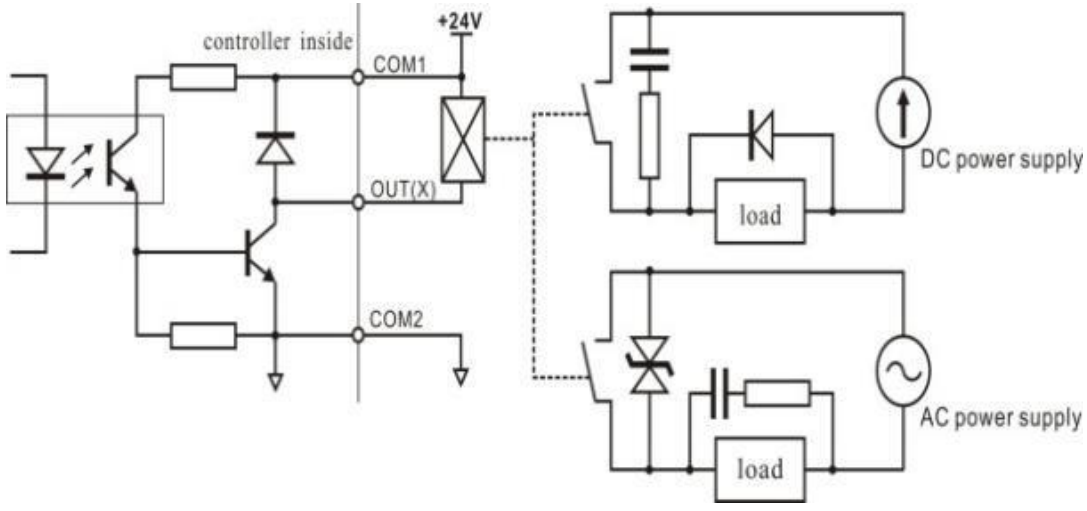
I/O tolerant definition as follows:

Output		Input	
OUT1	**O1 Stable**	**IN1**	**I6 Reset all**
OUT2	**O2 OFL**		

Indicator input terminal connection:

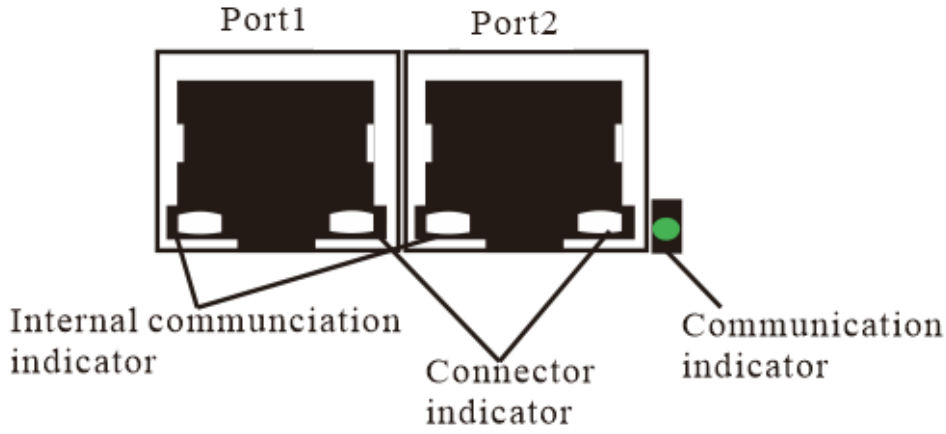


Indicator output terminal connection:



2.4 BUS Port connection

GMT-P1 supports **Profinet, Ethernet IP, EtherCAT, CCLINK** IE Base bus protocol communication **(the above three are optional functions, order need to declare).** Note: **When** EtherCAT communication, Port1 is used as the entrance. When connecting with multiple devices, the devices should be connected serially to distinguish the entrance and exit order.



Internal communication indicator: Hardware connection is normal, the internal communication indicator is ON.

Connector indicator: cable connection is normal, connection light is flashing.

Communication indicator: When PN, EIP and EtherCAT,CCLINK IE Base are communicating normally, the communication indicator is blinking.

3 Calibration

3.1 Instruction

(1) When **GMX-T1** weight transmitter or any part of the weighing system is changed for the first time and the current equipment calibration parameters can't meet the user's requirements, the display shall be calibrated. Calibration can determine the system zero and gain of the weighing system.

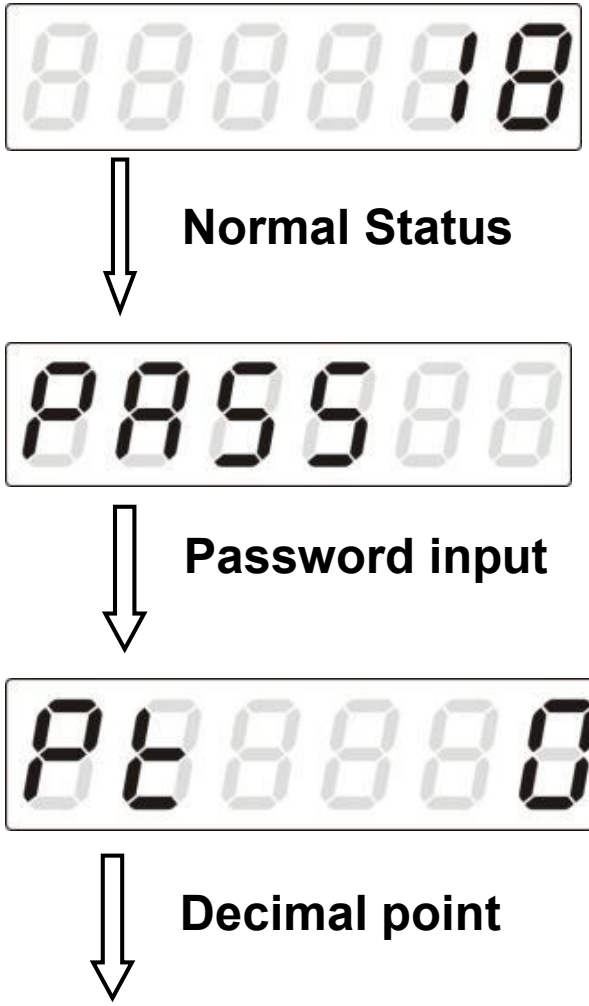
(2) If you want to set only one parameter, please press W/A ENTER to save parameter's value and then press ZERO ESC to exit.

(3) Please see section **3.7** for parameters' instruction.

(4) Please record each value in the blank table in section 3.4 during calibration for the emergency use in future.

(5) See chapter **9** for error alarm message that may be displayed during calibration.

3.2 Flow Chart of Calibration

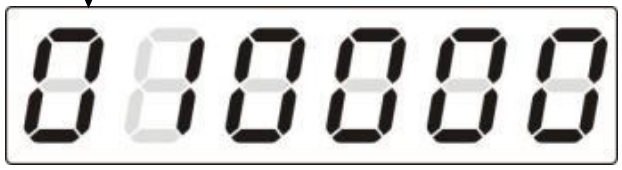


1. Under this status, press MODE▶ (twice), indicator will display **CAL**, then press W/A ENTER ● to enter password input.

2. After enter correct password, the indicator will display **CALON** for one second, then go to set decimal point.

3. Press TARE OPTION ▲ to select a desired value for decimal point among 0,0.0, 0.00, 0.000 and 0.0000, and then press W/A ENTER ● to save it and enter next step.
If there's no need to change the value, press W/A ENTER ● directly to enter next step.

Min. division



Max. capacity

Millivolt value display

4. Press TARE/OPTION ▲ to select a desired value for min. division among **1**,**2**,**5**,**10**,**20** and **50**, and then to save it and enter next step.

If there's no need to change the Min,division, then press W/A/ENTER directly to enter next step.

5. Input max. capacity(≤min. division×**1000000**), press W/A/ENTER to save it and enter Millivolt value display interface.

If there's no need to change the max. capacity value, then press W/A/ENTER directly to enter Millivolt display interface.

6. Under this status, press W/A/ENTER to enter zero calibration.

Display value near the output value in millivolt between **SIG+/SIG-** of load cell.

See section **3.3** for details about this function.

⇔

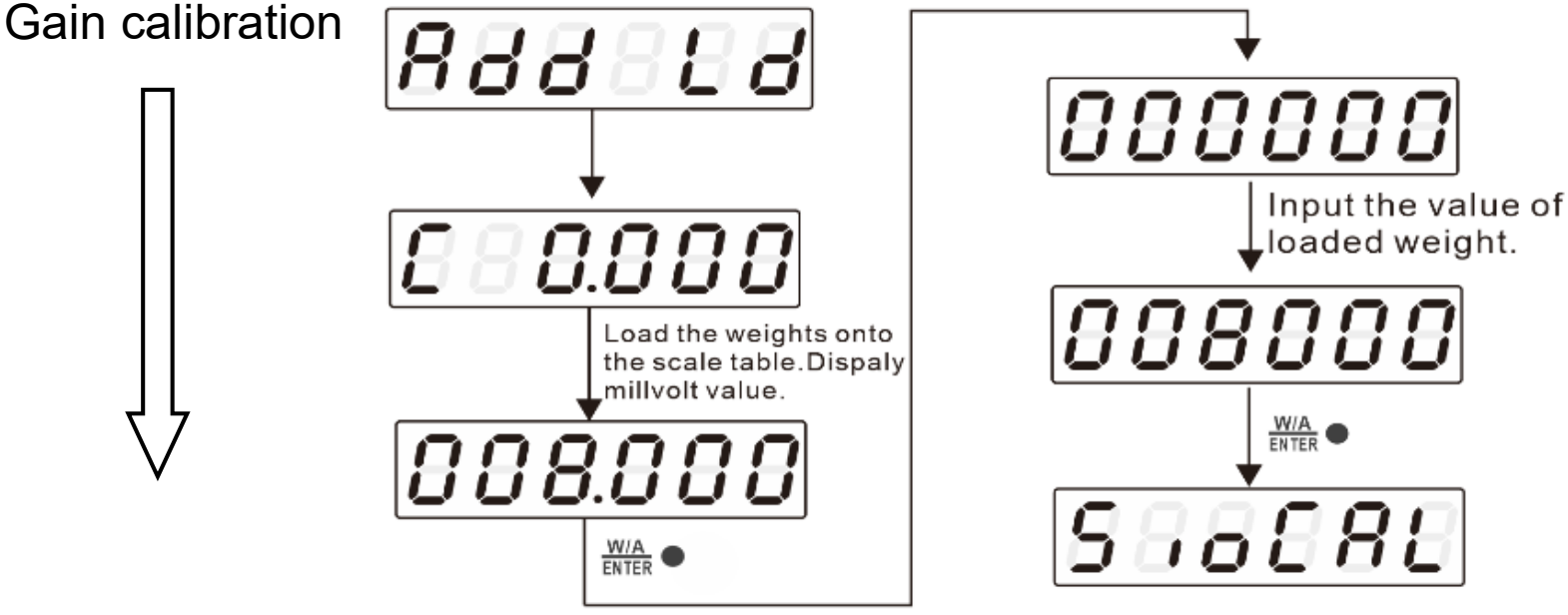
Zero calibration

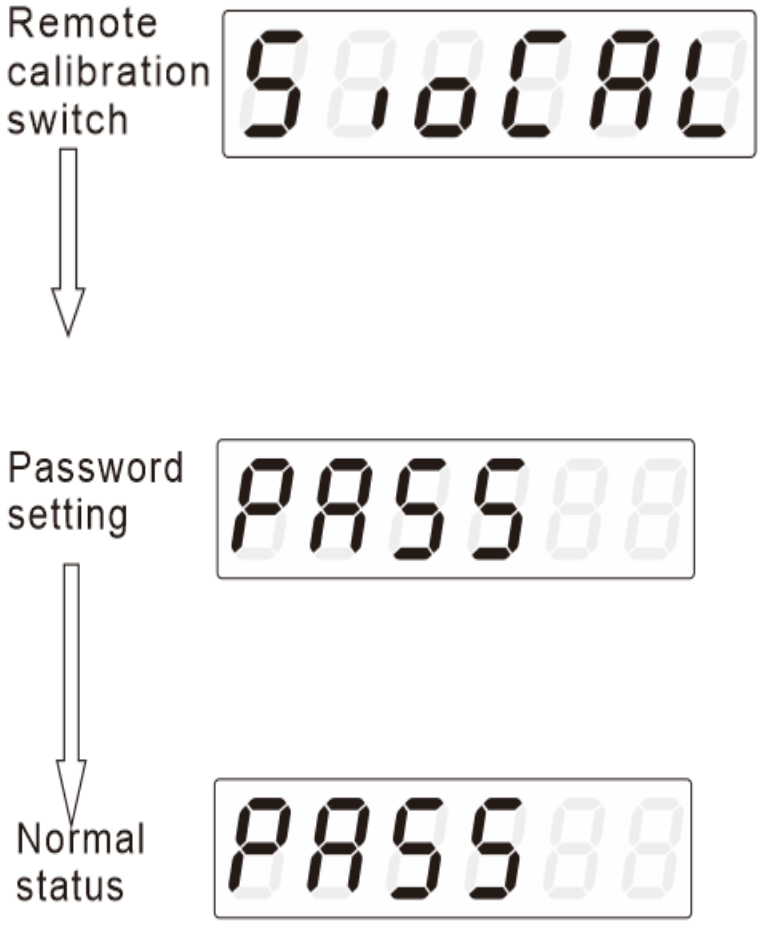
7.Unloaded scale first, when **STAB** lamp is on, press W/A ENTER ● to finish zero calibration.

If there's no need to calibrate zero, press ZERO ESC ■ directly to enter gain calibration.

8.The process of gain calibration is as follows. If there's no need to do gain calibration, press ZERO ESC ■ directly to enter serial ports calibration switch setting.

Gain calibration





9. Press W/A ENTER ● to enter remote calibration ON/OFF, press TARE OPTION ▲ to choose ON/OFF. press W/A ENTER ● to set password. If don't need to set switch position, then press ZERO ESC ■ to enter password setting.

10. Refer to section **7.2** to set password. If there's no need to set password, press ZERO ESC ■ directly to go back to normal status.

3.3 Millivolt Value Display

This function is mainly used for system test, position-error test for weighing mechanism and linearity test for load cell.

1. System Test

(1) If display data changes with loaded weight changes, it shows that connection of load cell is correct and weighing mechanism works well.

(2)If display value is OFL (or –OFL), it means that loaded weight on load cells is too large (or too small). Please unload the weight (or load more), if display value is still OFL (or –OFL), the possible reasons are as follows:

a. There is something wrong with weighing mechanism, please check and clear.

b. The connection of load cell is incorrect, please check and clear.

c. Load cells may be damaged, please replace.

2. Position-error Test for Weighing Mechanism

Load a same weight on each corner of weighing mechanism and record displayed millivolt value respectively. If differences among these values are obvious, please adjust weighing mechanism.

3. Linearity Test for Load Cell

Load same weight for several times, and record displayed value every time. If one or two values are obviously much larger or smaller than any others, it means that the linearity of load cell is bad.Please change the sensor.

3.4 Calibration with Weights

In Chapter 3.2, steps 7 and 8 in the calibration flow chart are operation instructions of zero calibration and gain calibration with weights.

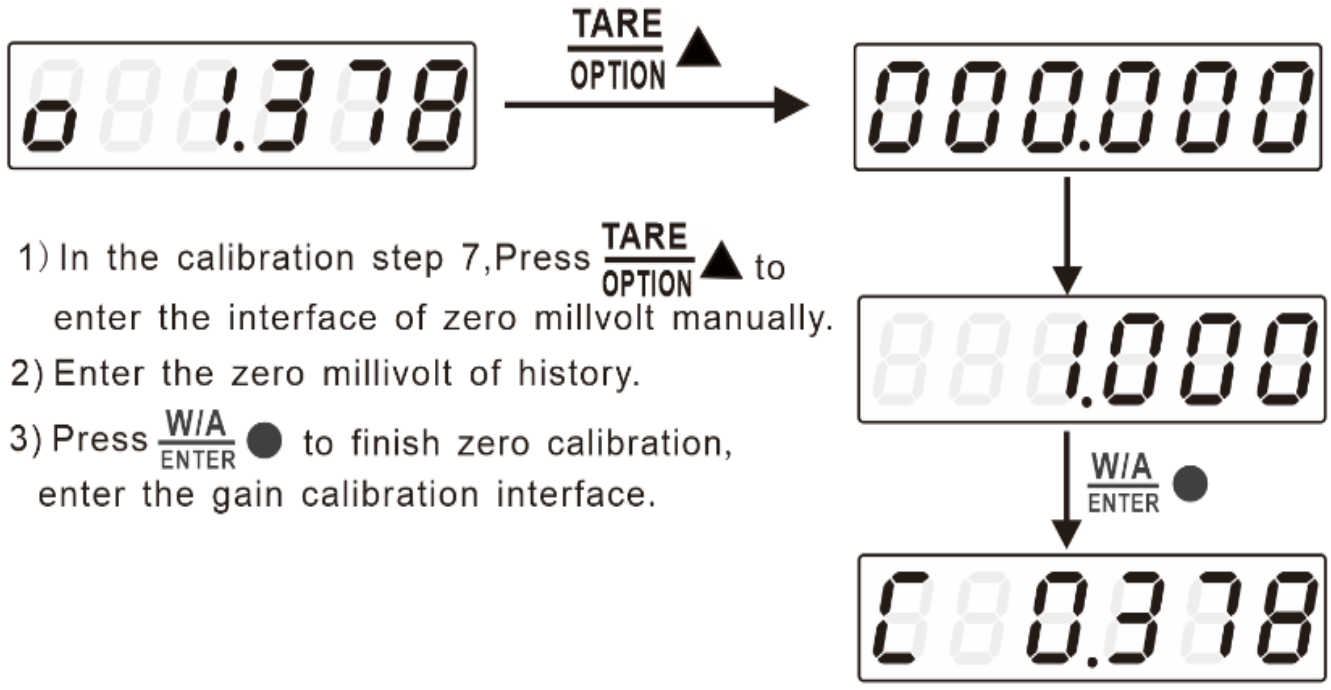
During calibration with weight, please record the zero millivolt value, gain millivolt value and the loaded weight value in the blank table below. If it is not convenient to load a weight to calibrate, these values can be used for calibration without weights.

	Zero millivolt value(mV)	Gain millivolt value(mV)	Loaded Weight	Date	Remarks
1					
2					
3					

3.5 No weight calibration

3.5.1 No weight zero Calibration

When the mechanism is calibrated with weights, the millivolt value corresponding to the empty balance should be recorded. Zero calibration is accomplished by manually entering historical values.



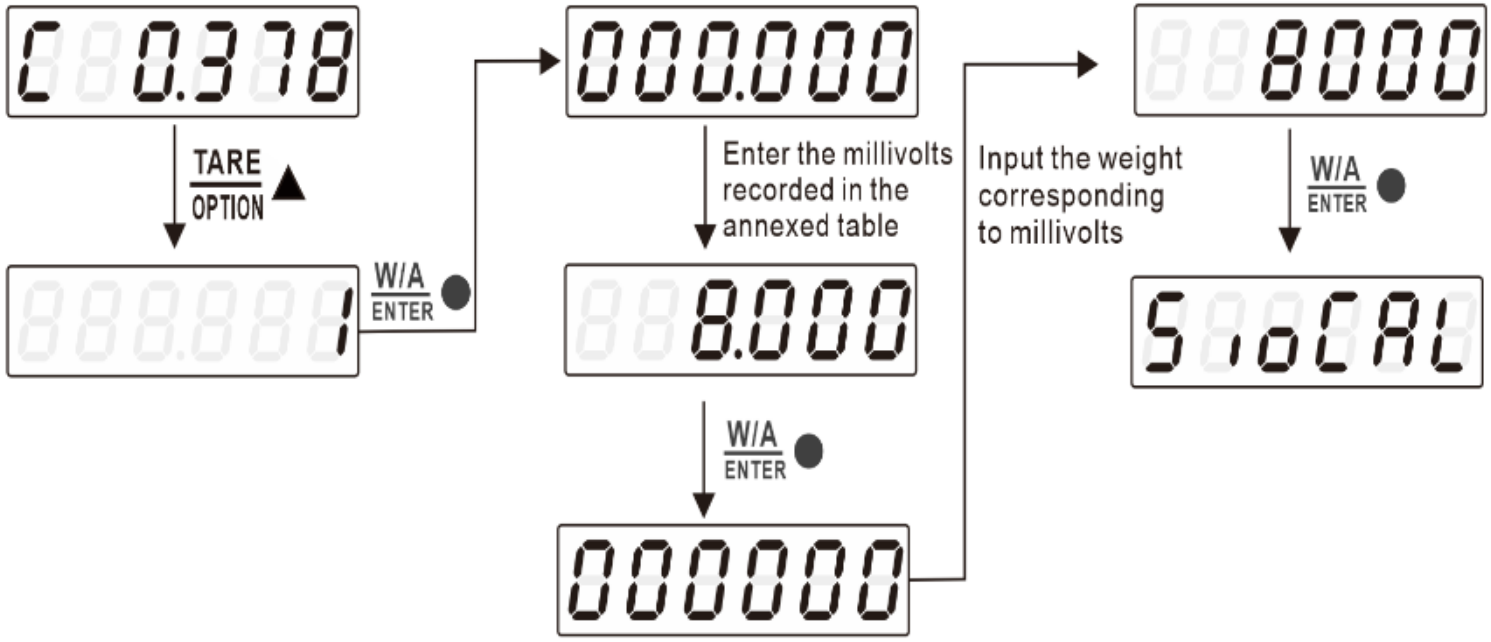
3.5.2 No weight gain Calibration

There are two methods for weighting - free calibration gain

1) Historical calibration: Gain calibration by entering historical record values.

2)Theoretical calibration: Calibrate through sensor sensitivity and maximum range value of input mechanism (the sum of the average value of input sensitivity and maximum range when multiple sensors are connected)

Historical gain calibration

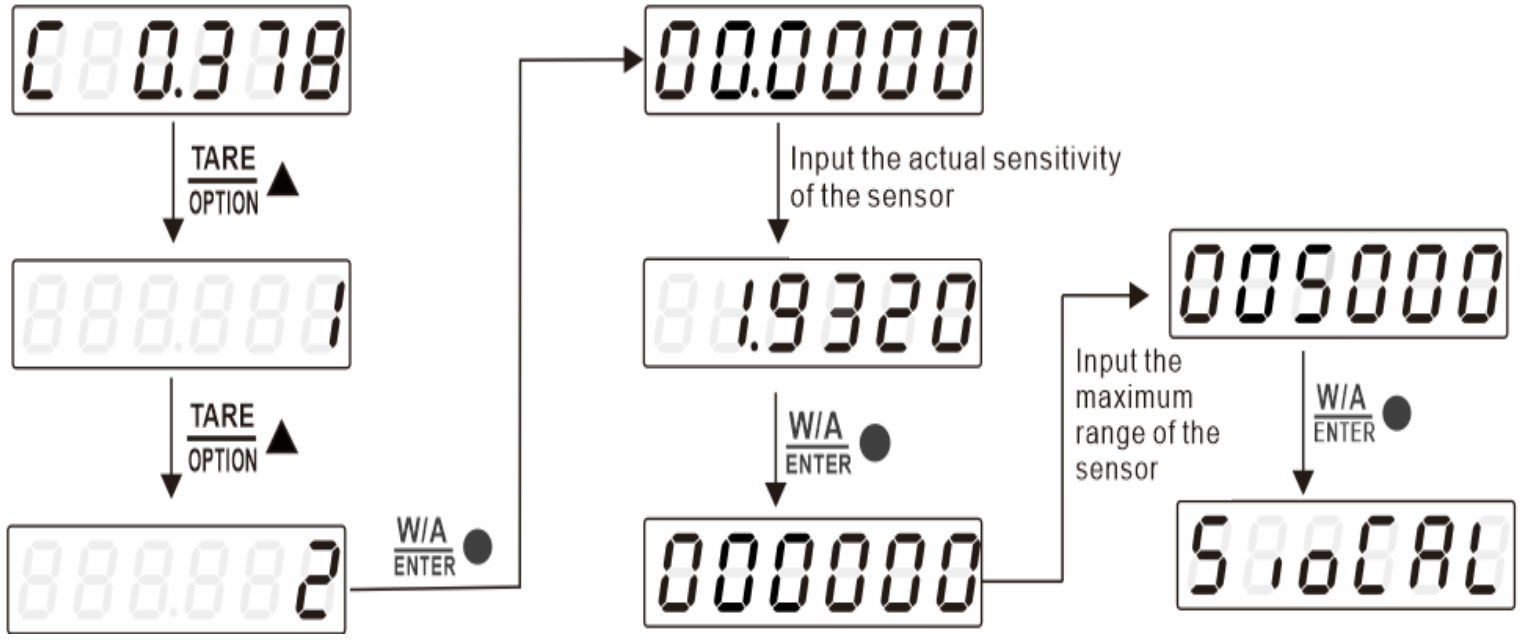


1) In gain calibration interface, press TARE/OPTION ▲, and the interface displays 1. Press W/A/ENTER ● to enter the manual gain millivolt input interface and enter the historical millivolt value.

2) Press W/A/ENTER ● save to enter the weight input interface and enter the weight value corresponding to the millivolt number.

3) Press W/A/ENTER ● save to complete gain calibration and enter the remote calibration switch.

Sensitivity and gain calibration range



1) In gain calibration interface, press twice TARE/OPTION ▲ to enter and choose "2" press enter interface for manual input of sensor sensitivity and input the sensitivity of the actual sensor.
2) Press W/A/ENTER ●, enter the maximum range input interface and input sensor range.

3) Press W/A ENTER, complete gain calibration and enter serial port calibration switch.

3.6 Remote calibration switch

When calibrate the transmitter over **PN/EIP/EtherCAT** communication, the remote calibration switch must be "ON" ,otherwise sending the calibration command will return an error.

3.7 Explanation for Calibration Parameters

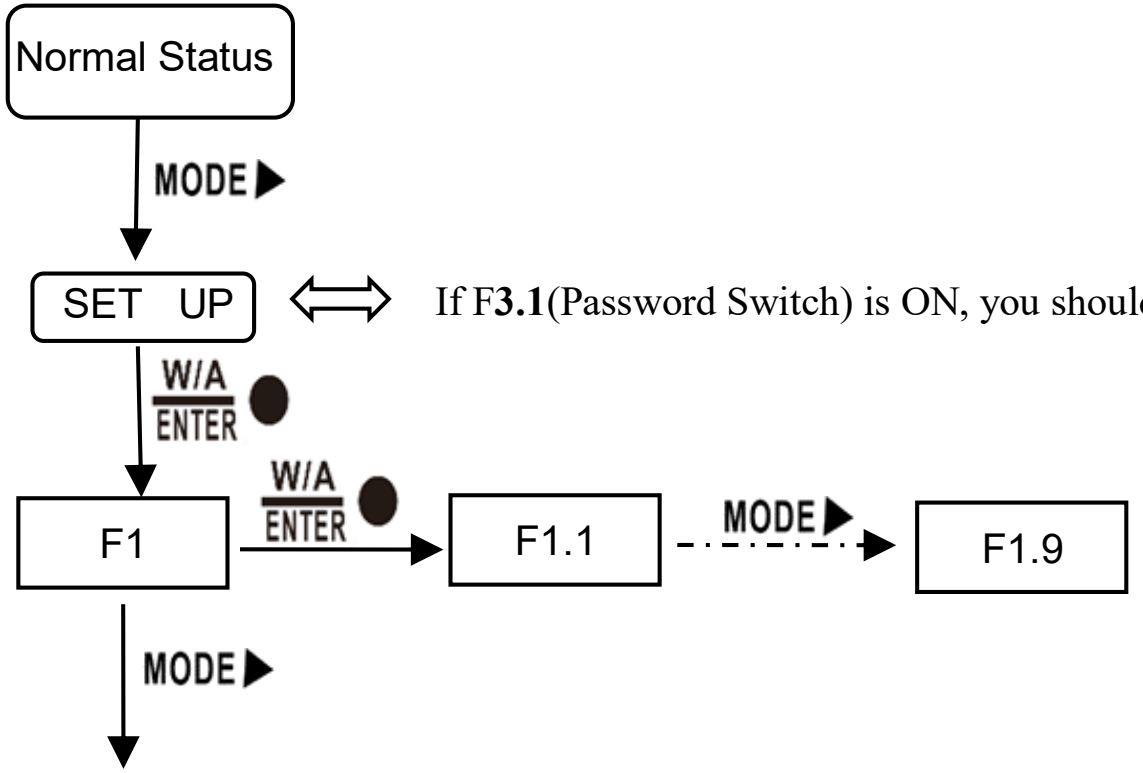
Symbol	Parameter	Types	Value of parameter	Default
Pt	Decimal Point	**5**	**0 0.0 0.00 0.000 0.0000**	**0**
1d	Min. Division	**6**	**1 2 5 10 20 50**	**1**
CP	Max. Capacity		≤Min. Division×**1000000**	**10000**
t	Millivolt Value			
o	Zero			
C	Gain			
SIOCAL	Remote calibration switch			**OFF**
PASS	Password Setting			**000000**

Annexed Table for Calibration Parameters

Parameter	Calibrated Value	Date	Remarks
Decimal Point			
Min. Division			
Max. Capacity			
Load cell sensitivity			
Password			

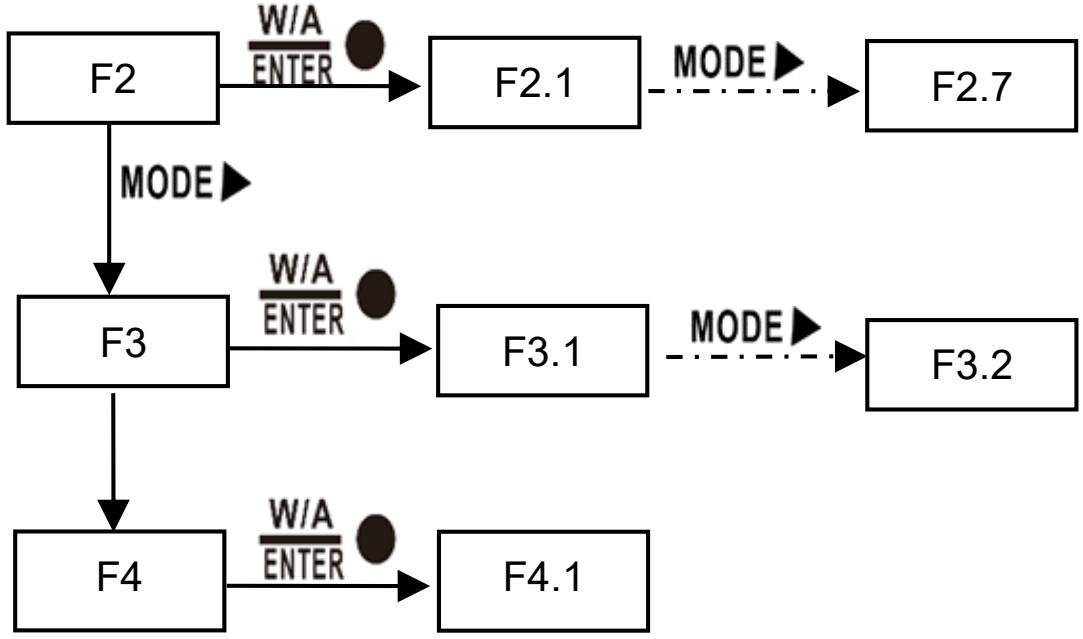
4 Working Parameters Setting

4.1 Flow Chart of Working Parameters Setting



If F**3.1**(Password Switch) is ON, you should input password first.

1. Use MODE▶ to select between the same level. Switch from display **F1** to **F2,** press MODE▶.



2 .Press W/A ENTER to enter into sub-selection, press ZERO ESC to return back to previous menu.

When it displays **F2**,press W/A ENTER to enter into **F2.1.**

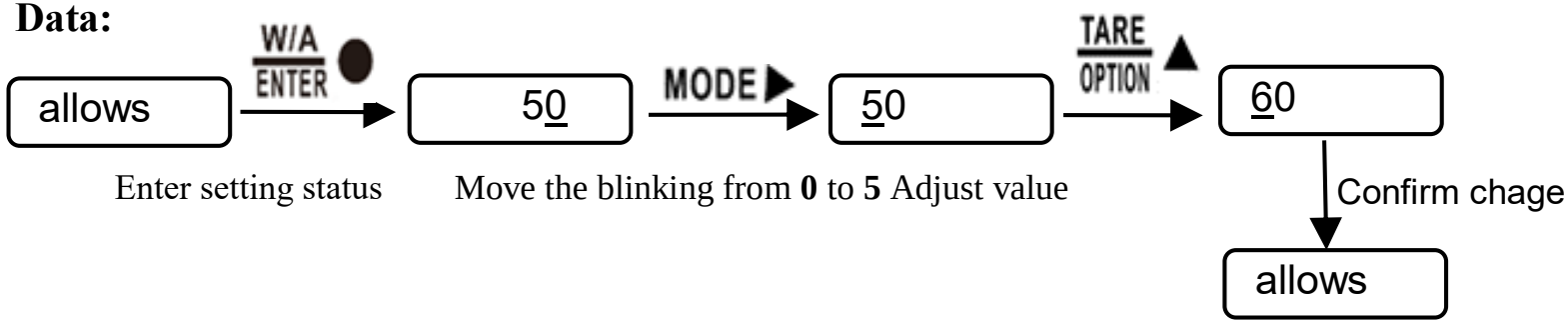
4.2 Parameter Setting Method

GMT-P1 has 2 kinds of working parameters: Selection type and data type. For selection type parameters, press TARE OPTION ▲ to choose. For data type parameter in parameter interface, press MODE ▶ to choose digit position, press TARE OPTION ▲ to choose value.

Selection:

Enter setting status Change **OFF** to **ON** Confirm the change

Data:



Enter setting status Move the blinking from **0** to **5** Adjust value

4.3 Descriptions of Operation Parameters

Code	Default	Description
F1	**Null**	**The first major term of working parameter.**
F1.1	**OFF**	Switch for Auto-Zeroing when power-on(met the zeroing range condition), **OFF:** disabled; **ON1**:the transmitter automatically performs zero-clearing after power-on. **ON2**:Restore zero before power failure after power-on.
F1.2	**0**	Zero-tracking Range (0 to 9d optional). This parameter is used to automatically calibrate the slight drift of zero due to a small amount of material remaining

		on the scale body. When set to 0, the zero-tracking function is disabled.
F1.3	**1**	Stable Range (0 ~ 9d optional) It is stable if the change is within range.
F1.4	**50**	Zeroing Range (00% to 99% of Maximum capacity) If the current weight > maximum range*zero range,the display "**Error2**".
F1.5	**5**	Digital filtering parameter: (0-9 as optional) 0: without filtering 9: strongest digital filtering
F1.6	**0**	Defibrillation filtering 0: without filtering 9: strongest digital filtering(0-9 as optional)
F1.7	**0**	A/D conversion rate: **120,240,480,960, 30,60** as optional
F1.8	**OFF**	NET indicator switch OFF:NET indicating gross/net weight, the indicator is on for net weight and off for gross weight. ON:NET indicating communication of the front and rear panels. When normal, the indicator keeps blinking.
F1.9	**OFF**	Parameter remote edit ON/OFF If this parameter set to ON, then work parameters and part of calibration parameters can be modified through the

		master station during bus communication. If this parameter set to OFF, the modified parameters on the primary site do not take effect.
F1.10	**GSD1/ EDS1**	Parameters are available only when the PN/EIP function is configured . **PN Parameters:** **GSD1** (silver standard)- Supports full parameter INPUT and OUTPUT (80 bytes INPUT, 48 bytes OUTPUT) and acyclic parameters.For details,see section 6.1.1.1 GSD1. **GSD2**(silver compact)- Support key parameter INPUT and OUTPUT (9 bytes INPUT, 1 bytes OUTPUT) and acyclic parameters. For details, see section 6.1.1.2 GSD2. **GSD3**(blue compact)- Support key parameter INPUT and OUTPUT (9 bytes INPUT, 1 bytes OUTPUT), do not support acyclic parameters. For details,see section 6.1.1.2 GSD2. **EIP Parameters:** **NULL;** **EDS1** (standard)- For details, see section 6.2.1.2 EDS1. **EDS2**(compact)- For details, see section 6.2.1.2 EDS2.

F1.11	**OFF**	PN communicates weight status with a seventh-bit heartbeat packet and tare instability alarm switch. (This parameter setting is only effective when PN communication is selected) OFF: Tare alarm is displayed when unstable . ON:The heartbeat packet is displayed.
F1.12	**Int**	PLC displays weight floating-point and integer switches. (Optional PN communication, this parameter setting is effective) **Int:** integer display; **Float:** floating-point is displayed.
F2	**Null**	The second largest term of the argument
F2.1 - F2.4	**192.168.001.001**	IP address ,ranges from **0.0.0.0 to 255.255.255.255.**
F2.5 - F2.10	**BC. 66.41.92.2 d. 12**	MAC address , read only.
F3	**Null**	Parameter setting the third item
F3.1	**OFF**	Parameter password setting switch. ON/OFF.

F3.2	**000000**	Parameter password setting; This parameter is valid when F3.1 is ON
F4	**Null**	**The fourth major term of working parameter.**
F4.1	**1.00000**	Weight correction factor K, weight correction factor K = Expected weight/current weight range: 0-9.99999 When the weight is calibrated (gain) or the calibration parameter is reset, the value changes to the default value of 1.00000
F5	**Null**	Parameter setting refer the 5th term
F5.1	**0**	EtherCAT site alias Settings. The changes take effect immediately. Range: **0 to 65535**

4.4 Set point parameters

Press the key MODE▶ **3** times in the main display interface, the instrument will display **SPoint**, under this interface, press W/A ENTER key, if the working parameter **F3.1** item is **ON**, then you need to enter the working parameter password, if it is **OFF**, then you can enter the set point parameter setting **P1** item without entering the password, press W/A ENTER key to enter the **P1.1** item, then the key parameter blinking, In this interface can modify the parameter value (see section 4.2 parameter Settings), after the modification is completed, press W/A ENTER to save, then

press the key ZERO/ESC ■ to exit to **P1** item,press MODE▶ key to the next parameter setting. In the same way, other parameters can be set.

Note: There are four setpoints in total. Set point **X** indicates "set point **1** to **4**", which can be set by users according to their needs.

Code	Default	Description
P1-P4	**Null**	**The first term of working parameters**
PX.1	**OFF**	After meeting the comparison condition of PX.3, whether it is necessary to wait for the weight to stabilize before changing the output set point X state of the switching quantity (set point X state
PX.2	**0.0**	After the continuous time and the PX.3 comparison condition is satisfied, the output set point X state of the switching quantity is changed (set point X state is divided into valid and invalid);Range:**0 to 99.9s**
PX.3	**P1.3 = 1** **P2.3 = 5** **P3.3 = 0** **P4.3 = 0**	Condition of validity: 0: forbid; 1: < Less than; when the weight is less than Px.4, the output is valid, otherwise it's invalid 2: <= Less than or equal to; when the weight is less than or equal to Fx.4, the output is valid; otherwise, it is invalid.

		3: == Equal; when the weight is equal to Px.4, the output is valid; otherwise, it is invalid 4: >=; Bigger than or equal to; when the weight is greater than Px.4, the output is valid, otherwise, it is invalid 5: > Bigger than; when the weight is greater than Px.4, the output is valid, otherwise, it is invalid 6:! = not equal to; when the weight is not equal to Px.4, the output is valid, otherwise, it is invalid 7: _<>_ Outside the interval, When the weight is less than Px.4 or more than Px.5, the output is valid, otherwise, it is invalid 8: =<__>= In the interval, when the weight is bigger than or equal to Px.4 and less than or equal to Px.5, the output is valid, otherwise, it is invalid 9: external trigger. If it's IO,trigger once converts a valid state to an invalid state , if it's command, it is determined by accepting a valid or invalid command.
PX.4	**0**	Set value 1; 0 ~ 999999 can be set
PX.5	**0**	Set value 2; 0 ~ 999999 can be set

Set point has **4** major terms which are user defined.

5 I/O Definition

5.1 I/O Definition

In the main display interface, press MODE ▶ 4 times to display **io dEF** in the indicator. In this interface, press W/A ENTER ● to enter the interface of custom setting of I/O module. If the password switch of working parameter F3.1 is set as ON, the password of working parameter needs to be entered before entering the custom setting of I/O module.

Operation steps of I/O module customization: After entering the interface of I/O module customization,

1) Press W/A ENTER ● to modify the definition of **OUT1**
2) Press TARE OPTION ▲ to select the meaning code of I/O module
3) Press W/A ENTER ● to confirm and return to the **OUT1** interface
4) Press MODE ▶ to define the next I/O module, then press MODE ▶ to skip the current I/O module definition (keep the original definition) to set the next I/O module. The definition method is the same as the above three steps, which will not be repeated here. Press ZERO ESC ■ to exit when the

setup is complete.

Output/Input code table:

Output		
Code	**Definition**	**Description**
O0	**None**	No definition
O1	**Stable**	Effective output in stable status.
O2	**Overflow**	Effective output when the weight overflow.
O3	**SP1**	Effective output when set point **1** status output.
O4	**SP2**	Effective output when set point **2** status output.
O5	**SP3**	Effective output when set point **3** status output.
O6	**SP4**	Effective output when set point **4** status output.
Input		
Code	**Definition**	**Description**
I0	**None**	No definition
I1	**Zeroing**	Effective input for zeroing, pulse input signals
I2	**SP1**	If this signal is valid, Sp**1** status will be regarded as invalid. Output valid state when comparision condition turns to invalid, and be effective again.

I3	**SP2**	If this signal is valid, Sp**2** status will be regarded as invalid. Output valid state when comparision condition turns to invalid, and be effective again.
I4	**SP3**	If this signal is valid, Sp**3** status will be regarded as invalid. Output valid state when comparision condition turns to invalid, and be effective again.
I5	**SP4**	If this signal is valid, Sp**4** status will be regarded as invalid. Output valid state when comparision condition turns to invalid, and be effective again.
I6	**Reset all**	Reset all parameter value when this signal is valid.
I7	**Tare/ Clear tare**	Tare when the first valid signal. Add tare when second.
I8	**Tare**	Tare when the signal is valid.
I9	**Add tare**	Add tare when the signal is valid.
I10	**I/0 define**	IO calibration lock, when I10 is defined, cannot be calibrated if the input is invalid.

5.2 I/O testing

⇔

Under weighing status, press MODE▶ **(5 times)**, then display **TEST io**, press W/A ENTER ● enter into I/O testing interface.

Normal Status

⇔

Press TARE OPTION ▲ **OUT1** status flash, press MODE▶ **OUT2** status flash.

⇔

This interface shows:**IN1** input valid, **OUT1** output

6 Communication

6.1 PROFINET Communication

GMT-P1 display has two PROFINET-IO bus connections, Port1 and Port2, and can be used as a PROFINET-IO slave station to connect to the PROFINET bus.

IP address can be set and viewed in Setup parameters F2.1 to F2.4; MAC address in F2.5~F2.10 to view.

6.1.1 I/O Status

GMT-P1 provides multi-byte, IO output in two modules, through which the master station can read and control the status of the weighing display.

6.1.1.1 GSD1

Module 1: Weight and status parameter (read register)

Offset	Parameter	Data type	Description
0	Weight display	**DInt**	Current display weight, integer
4	Weight status marker	**Duint**	D4-D15 Reserved
			D3: Weight marker
			D2: ZERO, (weight is in 0+/-1/4d range)
			D1: Weight overflows bit

			D0: Weight stable marker
8	Gross weight	**DInt**	Gross weight (signal integer)
12	Net weight	**DInt**	Net weight (signal integer)
16	Tare weight	**DInt**	Tare weight (signal integer)
20	Current weight	**Float**	Current weight, floating-point type
24	Gross weight	**Float**	Gross weight, floating-point type
28	Net weight	**Float**	Net weight, floating-point type
32	Tare weight	**Float**	Tare weight, floating-point type
36	Preset point status area	**Word**	**D5-D15** Reserved
			D3: Preset point 4 status area
			D2: Preset point 3 status area
			D1: Preset point 2 status area
			D0: Preset point 1 status area
38	Heartbeat communication	**Word**	After the connection is established, the value of the communication heartbeat of the PN will also be converted between 0 and 1 at the frequency of 1 Hz.

Module 2: Calibration parameter (read/ write register)

Offset	Parameter	Data type	Description	
Weight calibration				
0	Weight ZERO calibration	**DWord**	Read absolute millivolts	
4	Weight gain calibration	**DWord**	Read relative millivolts	
No weight calibration				
8	No weight ZERO calibration	**DWord**	Read Zero calibration millivolt	
12	No weight gain calibration voltage value	**DWord**	Read gain calibration millivolt	**Read register**
16	No weight gain calibration weight	**DWord**	Read gain calibration weight	
Theoretical value calibration				
20	Load cell sensitivity	**DWord**	Load cell sensitivity	
24	Load cell full range	**DWord**	Load cell full range	
28	Weight correction	**DWord**	used to correct the weight	

	factor		value factor	
Weight calibration				**Write register**
0	Weight ZERO calibration	**DWord**	Write 1 to automatically calibrate zero	
4	Weight gain calibration	**DWord**	Enter weight value	
No weight calibration				
8	No weight ZERO calibration	**DWord**	write Zero calibration millivolt	
12	No weight gain calibration voltage value	**DWord**	write gain calibration millivolt	
16	No weight gain calibration weight	**DWord**	write gain calibration weight	
Theoretical value calibration				
20	Load cell sensitivity	**DWord**	Write load cell sensitivity	
24	Load cell full range	**DWord**	Write load cell full range	

28	Weight correction factor	**DWord**	used to correct the weight value factor	
Function operation				
32	Function operation	**Byte4**	**D4-D7 reserved**	
			D3: GS/NT	
			D2: Clear tare	
			D1: Tare	
			D0: zero	
		Byte3	**D7：Reset IO**	
			D6：Reset All	
			D5：Reset Calibration	
			D4：Reset All	
			D0~ D3 reserved	
		Byte2	**D0-D7 reserved**	
		Byte1	**D0-D7 reserved**	

Module 3: Parameters revise（read/ write register）

Custom read				**Read register**
0	Read out value	**DWord**	The master station requests the data returned by the meter, the value obtained according to the "request read address".	
4	Write status	**Word**	Write data return status 0：no error 1：register address illegal 2：parameter error	
6	Read status	**Word**	Read data return status 0：no error 1：register address illegal 2：parameter error	
Custom write				
0	The request to write value of the modbus address	**DWord**	Write value address.	**Write register**
4	Input value	**DWord**	Input value to the request to write value of the modbus address	

8	The read request of the modbus address	**DWord**	Read address	

6.1.1.2 GSD2

Offset	Parameter	Data type	Description
Weight, millivolt and state parameters (Read Only, address)			
0	Weight display	**DInt**	Current display weight, integer **INPUT[0] :** indicates The highest byte of the current weight value **INPUT[1] :** The second highest byte of the current weight value. Input [1] : The second highest byte of the current weight value **INPUT[2] :**The sub lowest byte of the current weight value. Input [1] : The sub lowest byte of the current weight value **INPUT[3]:The** lowest byte of the current weight value. Input [2] : The lowest byte of the current weight value

4	Weight status marker	**Byte**	**D7:** If **F1.11** for 0 tare alarm display, **ERROR6** alarm state (when taring, current weight unstable):0 invalid, 1 valid; If **F1.11** is displayed as 1 heartbeat packet, it switches between 0 and 1 at 1HZ frequency
			D6: **ERROR3** alarm state (when taring, current weight unstable) : 0 invalid, 1 valid
			D5: **ERROR2** alarm state (when zeroing, current weight over zeroing range) : 0 invalid, 1 valid
			D4: Gross/Net (0 Gross; 1Net)
			D3: Weight marker, 0 positive, 1 negative
			D2: ZERO, 0 Non zero, 1ZERO
			D1: weight display overflow state, 0 normal, 1 OFL
			D0: Weight stable marker, 0 :STAB, 1:

			UnSTAB
5	Load cell millivolt	**Dint**	4 bytes sensor millivolt data, read absolute millivolt **INPUT[5]:**The highest byte of the current millivolt **INPUT[6]:**The second highest byte of the current millivolt. **INPUT[7]:**The sub lowest byte of the current millivolt **INPUT[8]:**The lowest byte of the current millivolt.
Function operate (write only, address)			
0	function parameter	**Byte**	**D3-D7** reserved
			D2: clear tare (1valid)
			D1: tare (1 valid)
			D0: zero (1 valid)

PN non-cyclic parameters list

Parameters	Description

Power-Up Zero ON/OFF	range: 0-1, 0: OFF 1: ON; initial value: 0
Zero track range	range: 0-9; initial value: 0
Stable range	range: 0-9; initial value: 1
Zero range	range: 0-99; initial value: 50
Digital Filter	range: 0-9; initial value: 5
Defibrillate Filter Level	range: 0-9; initial value: 0
Decimal Point	range: 0-4; initial value: 0
Resolution	range: 1,2,5,10,20,50; initial value: 1
Full Scale	range: 1-Resolution*1000000; initial value: 10000
Zeroing/tare password protect ON/OFF	range: 0-1, 0: OFF 1: ON; initial value: 1

6.1.2modbus read write operate address sheet

Register address	Means	Description	Read/write
0000-0001	Current absolute	Read current absolute millivolts	Read Only

	millivolts		
0002-0003	ZERO calibration millivolts	Read ZERO calibration millivolts	
0004-0005	Current relative ZERO millivolts	Read current relative ZERO millivolts	
0006-0007	gain calibration millivolts	Read gain calibration millivolts	
0008-0009	gain calibration weight	Read gain calibration weight	
0010-0011	load cell sensitivity	Read load cell sensitivity	
0012-0013	load cell full range	Read load cell full range	
0014-0015	Weight Correction coefficient	Read weight Correction coefficient	
0016-0017	Transmit weight state data to **PN**	**D4 to D15**: reserved **D3:** tare weight UnSTAB **D2:** Zeroing UnSTAB **D1:** zeroing over range **D0:** net/gross weight	Read Only

0018 ~ 0019	reserved		
0020	Power-Up Zero ON/OFF	Power-Up Zero ON/OFF (0: OFF; 1: ON)	read /write (Note: remote edit ON/OFF when1 can write)
0021	Zeroing range	ZERO track range (0-99d)	
0022	ZERO track range	Stable range (0-9d)	
0023	Stable range	Zeroing range(0-9d)	
0024	Digital Filter	digital filter parameter (0-9)	
0025	Defibrillate Filter Level	defibrillate filter parameter (0-9)	
0026	AD sample frequency	AD sample frequency: 0:30time/s 1:60time/s 2:120time/s 3:240 time/s 4:480time/s 5:960time/s	
0027	communication light ON/OFF	NET light ON/OFF; 0: NET/gross; 1: communication indicate	
0028	remote edit ON/OFF	When turn ON, The parameters can be set through the	Read Only

		communication port. Otherwise Read Only.	
0029	remote calibration ON/OFF	When turn ON, Calibration parameters can be set through the communication port. Otherwise Read Only.	Read/write (Note: remote edit ON/OFF when1 can write)
0030	Decimal Point	Decimal Point address (0:0byte; 1:1byte; 2:2byte; 3:3byte; 4:4byte)	Read/write (Note: remote calibration ON/OFF when 1 can write)
0031	Division value	Resolution value**(1/2/5/10/20/50)**	
0032-0033	Full Scale	write range (Full Scale≤Resolution×**1000000**)	
0034 ~ 0039	reserved		
0040	File type	For PN communication: **1:**GSD1(standard); **2:**GSD2(compact). For EIP communication:	Read/write

		0: NULL; **1**:EDS1(standard); **2**:EDS2(compact)	
0041	Shift ON/OFF	**PN** communication weight state byte No.7 byte heart beat and tare alarm unstable shift ON/OFF **0:** tare alarm display **1:** heart beat display	
0041 ~ 0049	reserved		
0050	Set Point1 if stable	**0**: No; **1**: Yes	Read/write (Note: remote edit ON/OFF when 1 Can write)
0051	Set Point1 mini duration time	**0-999:0-99.9s**	
0052	Set Point1 valid condition		
0053-0054	Set Point1 value1		
0055-0056	Set Point1 value2		
0057	Set Point2 if stable	**0**: No; **1**: Yes	
0058	Set Point2 mini duration time	0-999:0-99.9s	

0059	Set Point2 valid condition		
0060-0061	Set Point2 value1		
0062-0063	Set Point2 value2		
0064	Set Point3 if stable	**0**: No; **1**: Yes	
0065	Set Point3 mini duration time	0-999:0-99.9s	
0066	Set Point3 valid condition		
0067-0068	Set Point3 value1		
0069-0070	Set Point3 value2		
0071	Set Point4 if stable	**0**: No; **1**: Yes	
0072	Set Point4 mini duration time	0-999:0-99.9s	
0073	Set Point4 valid condition		
0074-0075	Set Point4 value1		
0076-0077	Set Point4 value2		
0078	IO output1	I/O module output define	
0079	IO output2	I/O module output define	

0080	IO input1	I/O module input define	
0081~ 0089	reserved		
0090	IP1	Ethernet IP address (Note: PN mode do not support modify; only in EIP mode support modify, valid only after modify need re-power up)	Read/write
0091	IP2		
0092	IP3		
0093	IP4		
0093 ~ 8999	reserved		

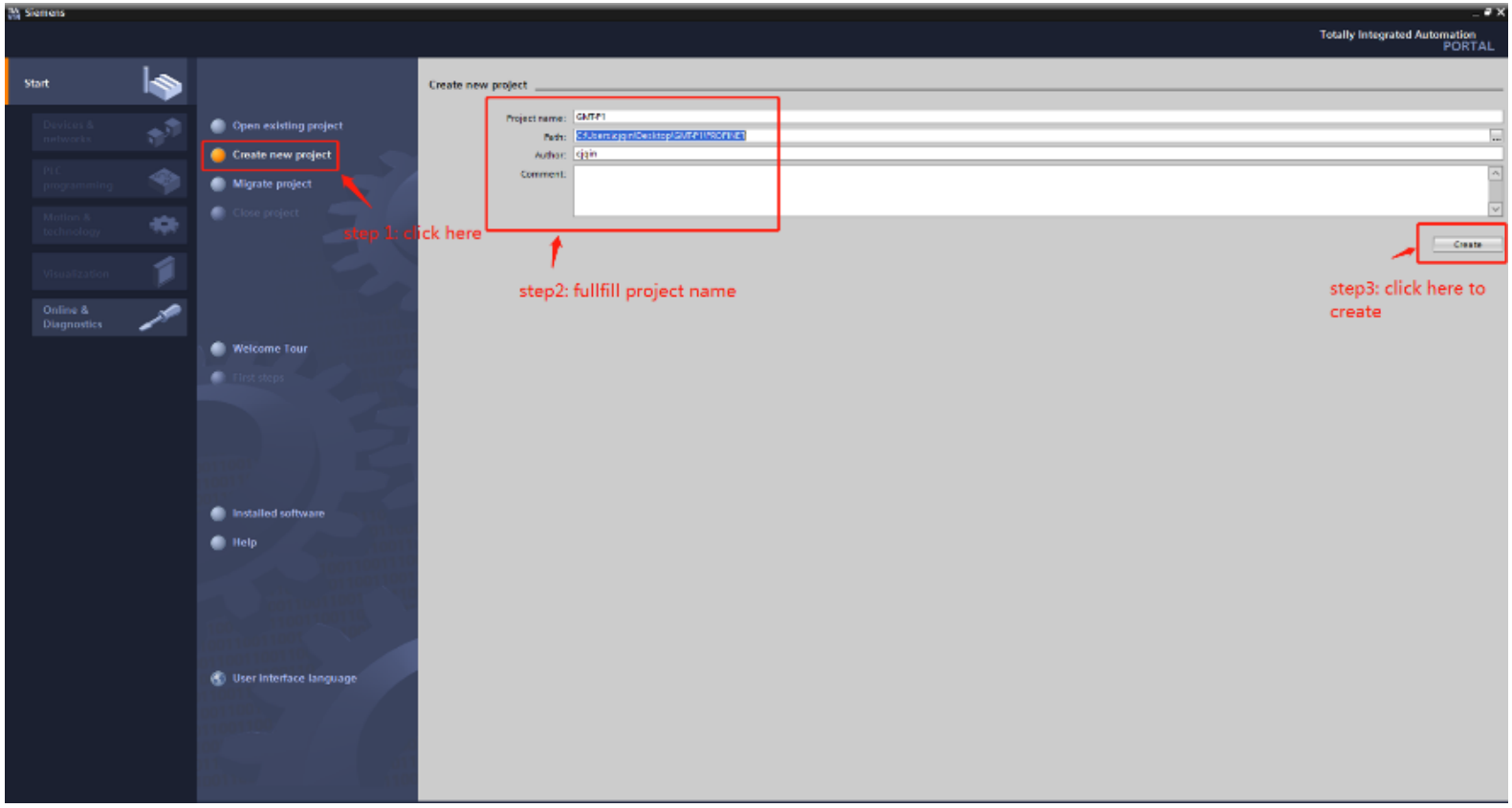
6.1.3 Device Description file GSD

GMT-P1 description file and connection method can download at www.gmweighing.com

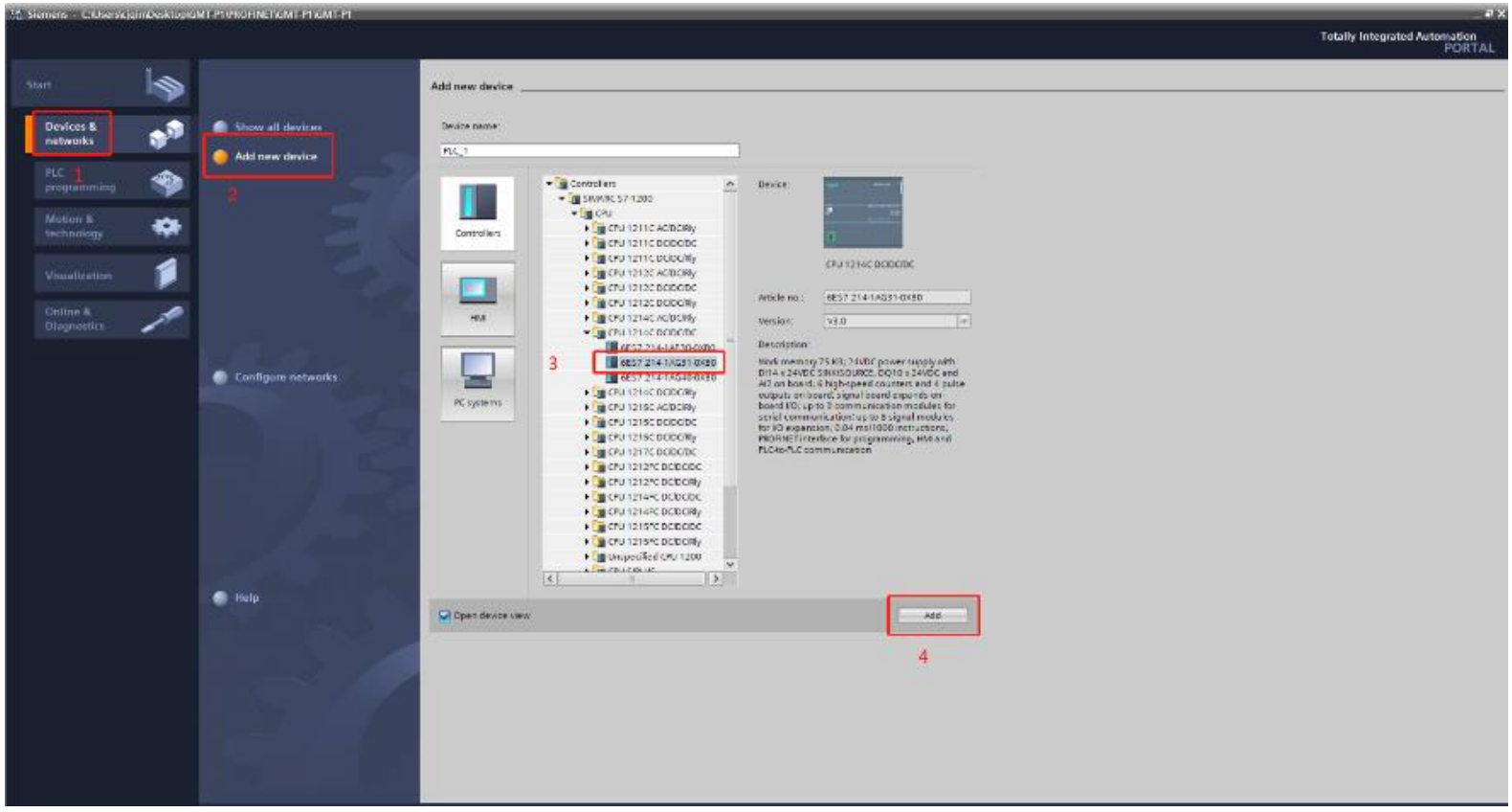
6.1.4 Profinet master configuration GMT-P1

Taking Siemens 1200 as the master station as an example, GMT-P1 is briefly configured as the slave station.

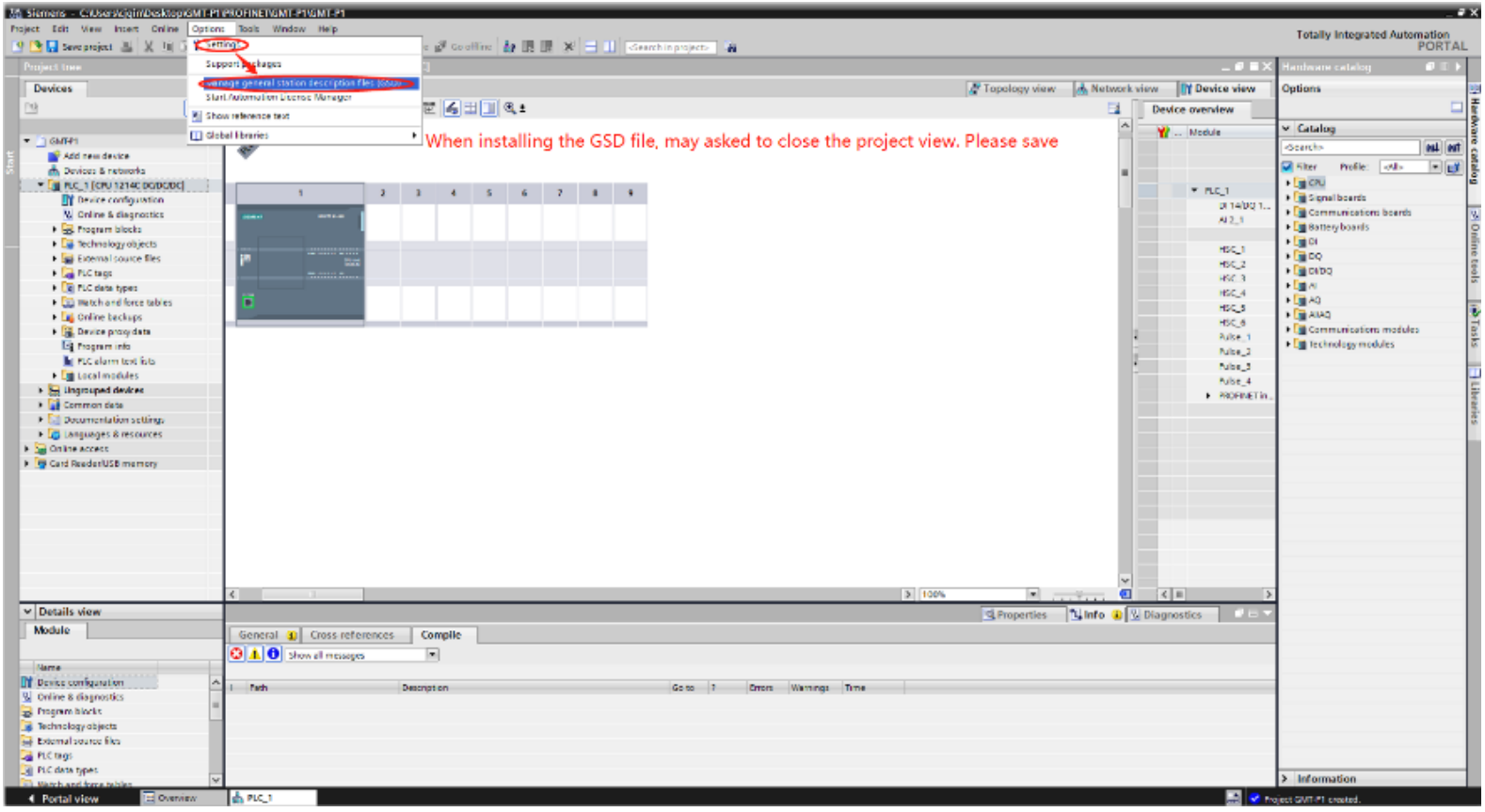
1) Open the Botu management software and create a new project



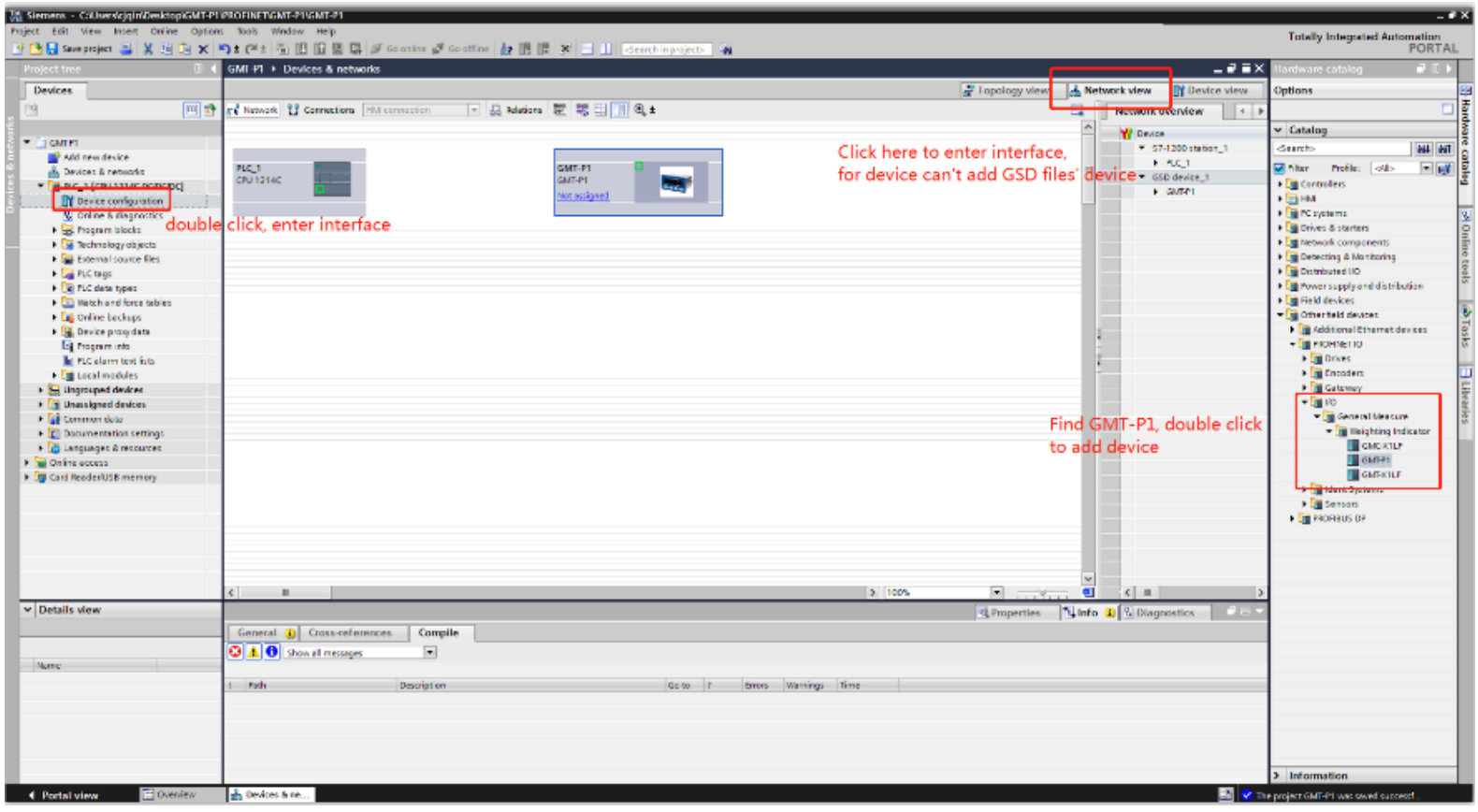
2) Click "Add New Device" on the left and select "Controller" to select the model to use the corresponding PLC

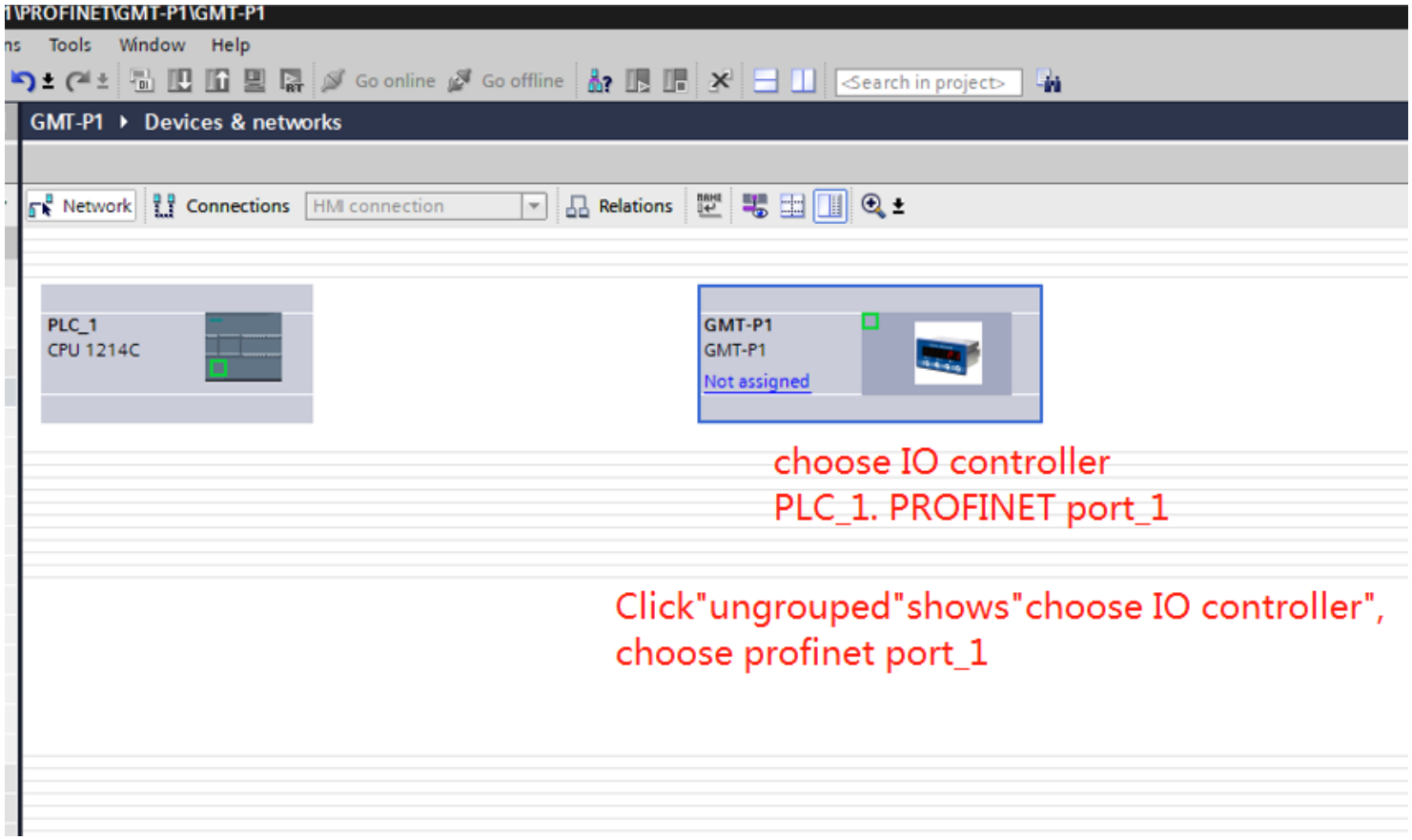


3) Double-click the PLC device in the left "Local Module", and select " Manage general station description files (GSD)" from the menu bar.

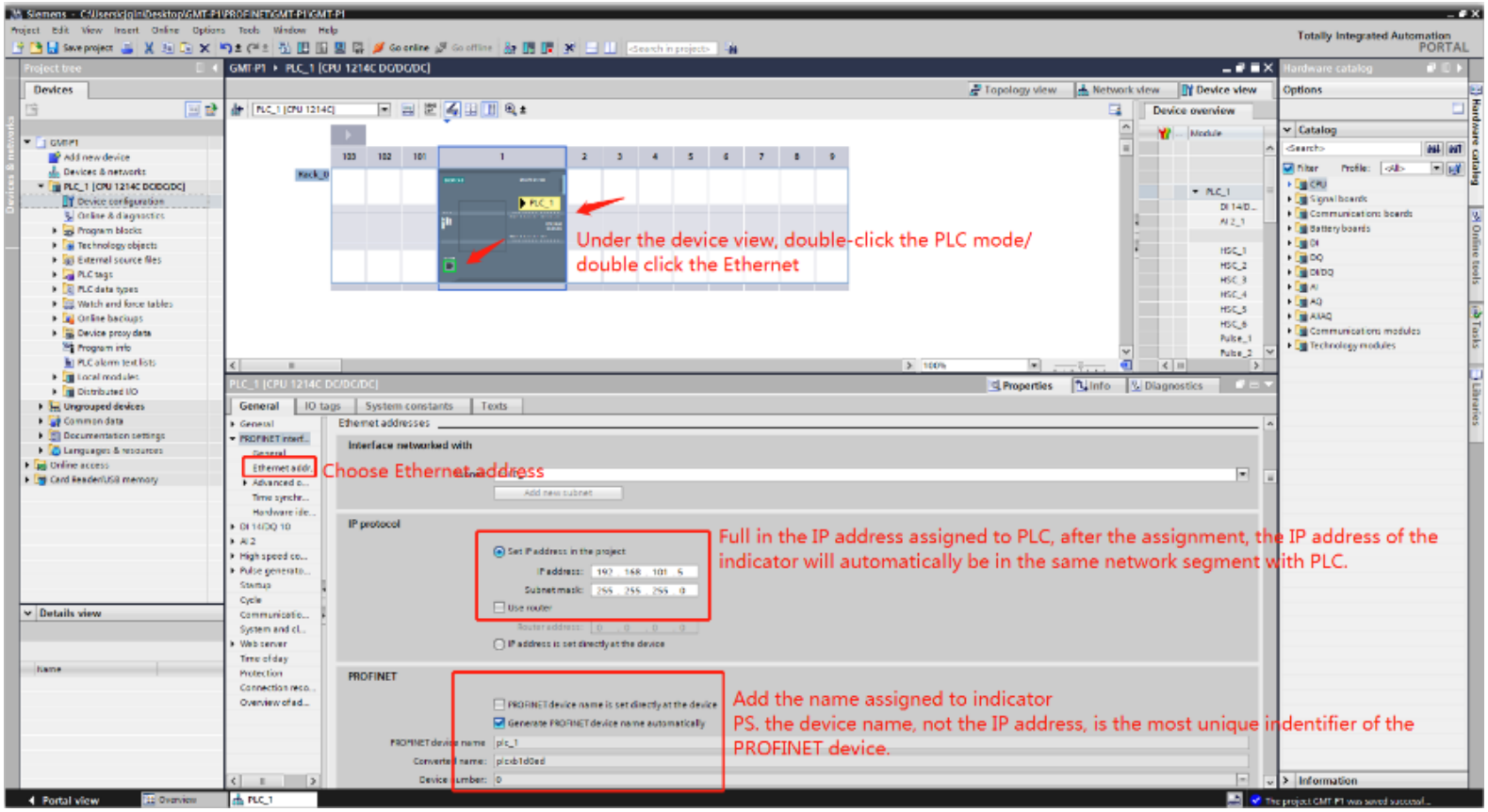


4) Configuration network. Switch to Network View, find GMT-P1 Device, double-click add Device to connect the indicator to the PLC.

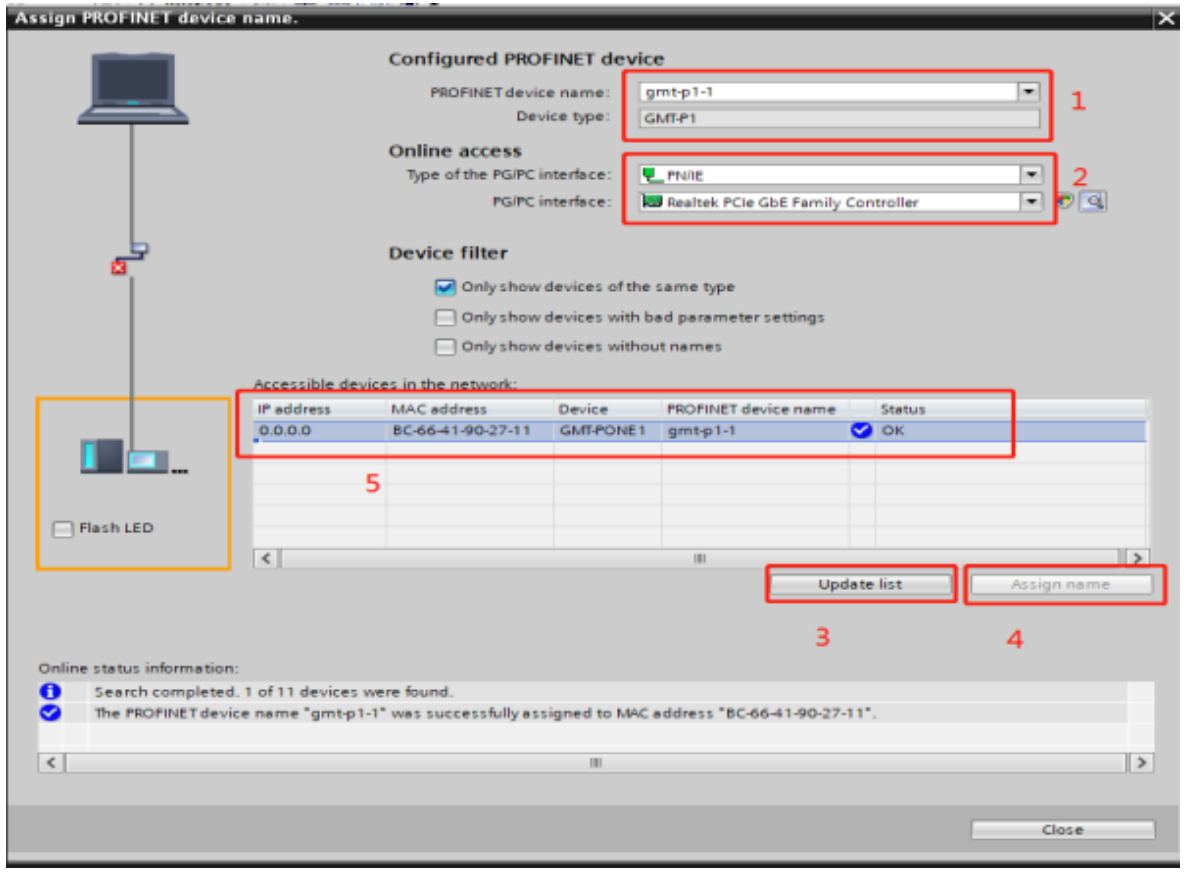

Click here to enter interface, for device can't add GSD files' device
double click, enter interface
Find GMT-P1, double click to add device


\PROFINET\GMT-P1\GMT-P1
ns Tools Window Help
Go online
Go offline
<Search in project>
GMT-P1 ▸ Devices & networks
Network
Connections
HMI connection
Relations
PLC_1
CPU 1214C
GMT-P1
GMT-P1
Not assigned
choose IO controller
PLC_1. PROFINET port_1
Click"ungrouped"shows"choose IO controller",
choose profinet port_1

5) Set the IP address and name. In the device view, double-click the PLC module/double-click the network port to Settings



6) Assign device names. Device view as below, right-click and select assign device Name.

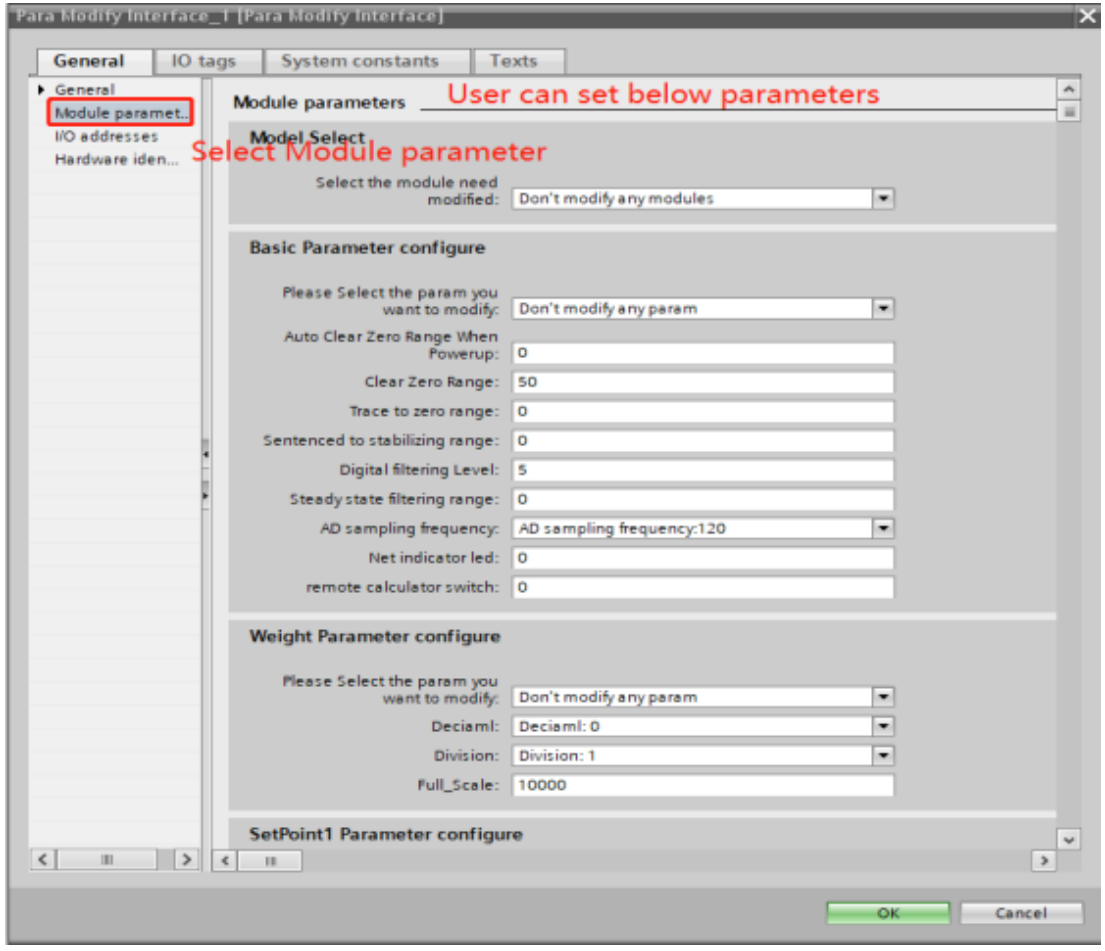


7) Configure indicator parameters and operate them. In the Device view, click "Ungrouped Device→ Parameter Modify Interface _1→ Property" on the left.

Note:

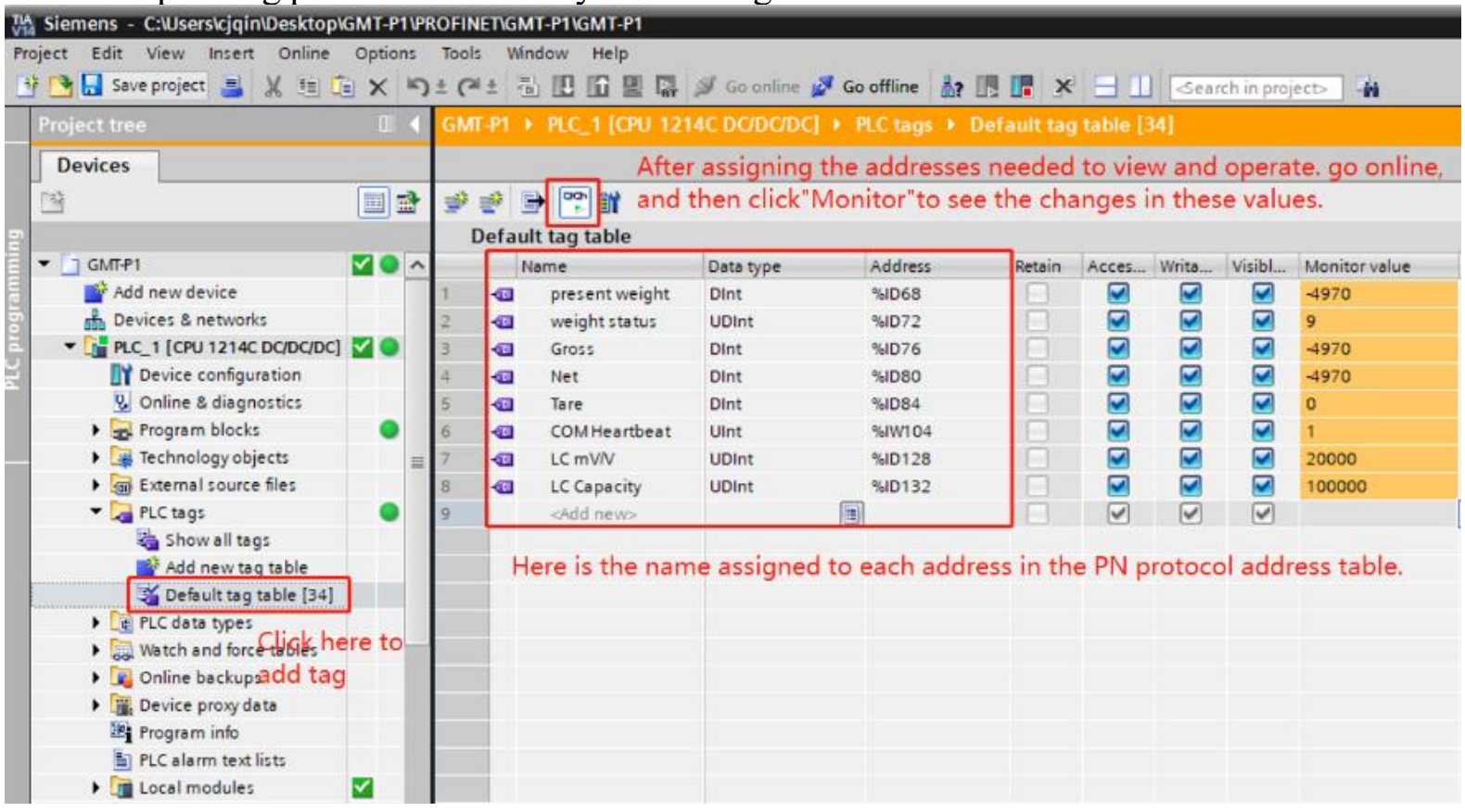
✧ The remote calibration ON/OFF is required to be ON to modify the calibration parameters.

✧ After modifying the parameters, need to recompile and download to PLC, the parameters take effect.

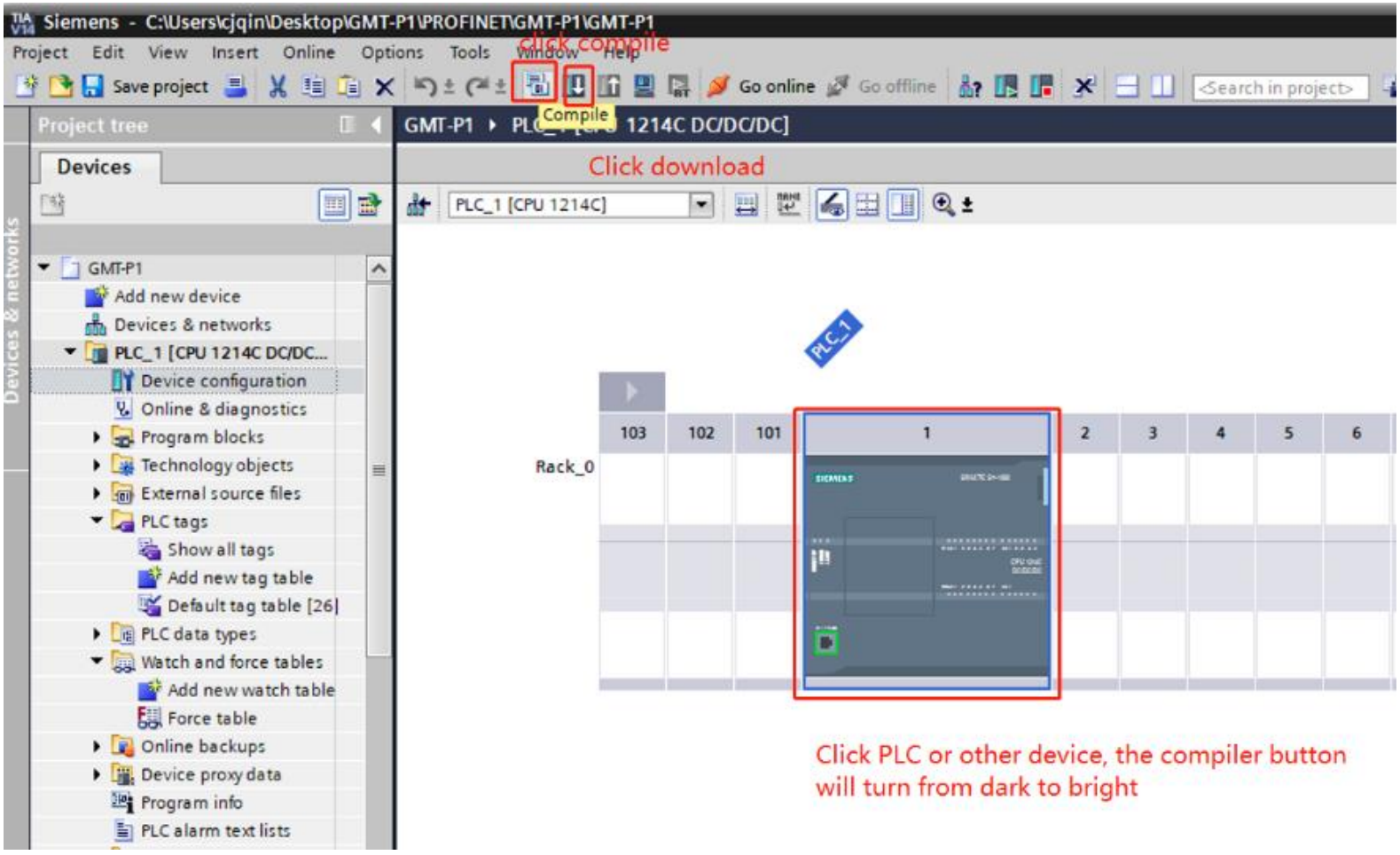


8) IO loop data operation. In the device view, view the IO address assigned to the module by the PLC. Assign I address and Q address according to IO status table. Modify

corresponding parameter values by monitoring table.



9) Compile, download and online. After downloading, switch to online, open the monitoring table, you can view and modify the parameters of the indicator.


Siemens - C:\Users\cjqin\Desktop\GMT-P1\PROFINET\GMT-P1\GMT-P1
Project Edit View Insert Online Options Tools Window Help
click compile
Save project
Go online
Go offline
<Search in project>
Compile
Project tree
Devices
GMT-P1
Add new device
Devices & networks
PLC_1 [CPU 1214C DC/DC...
Device configuration
Online & diagnostics
Program blocks
Technology objects
External source files
PLC tags
Show all tags
Add new tag table
Default tag table [26]
PLC data types
Watch and force tables
Add new watch table
Force table
Online backups
Device proxy data
Program info
PLC alarm text lists
Devices & networks
GMT-P1 ▸ PLC_1 [CPU 1214C DC/DC/DC]
Click download
PLC_1 [CPU 1214C]
PLC_1
Rack_0
103 102 101 1 2 3 4 5 6
Click PLC or other device, the compiler button will turn from dark to bright

6.2 Ethernet-IP communication

You can set and view the **IP** address of the indicator in the second major item of the parameter. After setting, it will take effect only after re-powering. You can also view the **MAC** address.

6.2.1 IO status

GMT-P1 provides multi-byte **IO,** through these I/O enable the master station to read and control the status of the weighing display

6.2.1.1 EDS1

Module 1: weight, calibration and status parameters (read register)

Offset	Parameter	Data type	Description
0	Weight display	**DInt**	Current display weight, integer
2	Weight status marker	**Duint**	D4-D31 Reserved
			D3: Weight marker
			D2: ZERO, (weight is in 0+/-1/4d range)
			D1: Weight overflows marker
			D0: Weight stable marker
4	Gross weight	**DInt**	Gross weight (signal integer)

6	Net weight	**DInt**	Net weight (signal integer)
8	Tare weight	**DInt**	Tare weight (signal integer)
10	Current weight	**Float**	Current weight, floating-point type
12	Gross weight	**Float**	Gross weight, floating-point type
14	Net weight	**Float**	Net weight, floating-point type
16	Tare weight	**Float**	Tare weight, floating-point type
18	Preset point status area	**Word**	**D4-D15** Reserved
			D3: Preset point 4 status area
			D2: Preset point 3 status area
			D1: Preset point 2 status area
			D0: Preset point 1 status area
19	Heartbeat communication	**Word**	The communication light flashes at 1 Hz, and the communication heartbeat switches between 0 and 1 at 1 Hz
Weight calibration			
20	weight zero calibration	**DWord**	Read absolute millivolts
22	weight gain calibration	**DWord**	Read relative millivolts
No weight calibration			

24	No weight zero calibration	**DWord**	Read zero calibration millivolt
26	No weight gain calibration voltage value	**DWord**	Read gain calibration voltage value
28	No weight gain calibration weight value	**DWord**	Read gain calibration weight
Theoretical value calibration			
30	Load cell sensitivity	**DWord**	load cell sensitivity
32	Load cell full range	**DWord**	load cell full range
34	Weight correction factor	**DWord**	used to correct the weight value factor
Self-defined read			
36	Modbus read value	**DWord**	The master station requests the data returned by the meter, the value obtained according to the "request read address".
38	Modbus write status	**Word**	Write data return status , 0：no error 1：register address illegal 2：parameter error
39	Modbus read status	**Word**	Read data return status 0：no error 1：register address illegal 2：parameter error

Module 2: calibration and operation parameters (write register)

Weight calibration			
0	Weight ZERO calibration	**DWord**	Write 1 auto zeroing
2	Weight gain calibration	**DWord**	Write weight value
No weight calibration			
4	No weight ZERO calibration	**DWord**	Write Zero millivolt
6	No weight gain calibration voltage value	**DWord**	Write gain millivolt
8	No weight gain calibration weight	**DWord**	Write gain weight
Theoretical value calibration			
10	Load cell sensitivity	**DWord**	Write load cell sensitivity
12	Load cell full range	**DWord**	Write load cell full range
14	Weight correction factor	**DWord**	used to correct the weight value factor
Function operation			
16	Function operation	**Duint**	**D15**: I/O module reset
			D14: Parameter reset

			D13: Calibration reset
			D12: Reset all
			D4-D11: Reserved
			D3: GS/NT
			D2: Clear tare
			D1: Clear Tare
			D0: Zero
18	The request to write value of the modbus address	**DWord**	Write value address,refer to section 6.1.2 modbus address sheet.
20	Input value	**DWord**	Input value to the request to write value of the modbus address, refer to section 6.1.2 modbus address sheet.
22	The read request of the modbus address	**DWord**	Read address, ,refer to section 6.1.2 modbus address sheet.

6.2.1.2 **EDS2**

EIP cycle parameter list

offset	Parameter	Data type	Description
0	Weight display	**DInt**	Current display weight, integer

2	Weight status marker (Read Only)	**Duint**	D4-D31: Reserved
			D03: Weight marker
			D02: ZERO, (weight is in 0+/-1/4d range)
			D01: Weight overflows bit
			D00: Weight stable marker: 0:STAB,1:UnSTAB
4	absolute millivolts (Read Only)	**DWord**	Read absolute millivolts
6	read value	**DWord**	Get the value by writing the address to read
8	Write status	**Word**	Write the returned status of data. 0: no error. 1: Register address is invalid 2: data error
9	Communication heartbeat	**Word**	After the connection is established, the value of the communication heart beat is converted from 0 to 1 at the frequency of 1 Hz
function operate			
0	Function parameter	**Duint**	D15: I/O module reset

	(can write)		D14: Parameter reset
			D13: Calibration reset
			D12: All reset
			D4-D11reserved
			D3: Gross/net
			D2: Clear tare
			D1: Ttare
			D0: Zeroing
2	The request to write value of the modbus address	**DWord**	Write value address,refer to section 6.1.2 modbus address sheet.
4	Input value	**DWord**	Input value to the request to write value of the modbus address, refer to section 6.1.2 modbus address sheet.
6	The read request of the modbus address	**DWord**	Read address, ,refer to section 6.1.2 modbus address sheet.

EIP Non-cyclic parameters list

Parameters	Description
Power-Up Zero ON/OFF	range: 0-1; initial value: 0; 0: OFF; 1: ON
Zero-tracking Range	range: 0-9; initial value: 0

Stable range	range: 0-9; initial value: 1
Zeroing range	range: 0-99; initial value: 50
Digital Filter	range: 0-9; initial value: 5
Defibrillate Filter Level	range: 0-9; initial value: 0
Decimal Point	range: 0-4; initial value: 0
Resolution value	range: 1,2,5,10,20,50; initial value: 1
Full Scale	range: 1-Resolution*1000000; initial value: 10000

6.2.2 Device description file EDS

GMT-P1 device description file and connection method can down load at www.gmweighing.com

6.3 EtherCAT Communication

GMT-P1 has two bus connection ports: **Port1** and **Port 2**, with **Port1** as the entry 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.

6.3.1 Compact Version Parameter address

6.3.1.1 Circular Parameter List

Data Types	Parameter names	Parameter Description
REAL	Current weight (Read only)	Weight currently displayed, single precision floating point type
DINT	Weight status bit (Read only)	**D9-D31**: Reserved **D8**: Communication heartbeat The communication light blinks at 1HZ and the communication heartbeat switches between 0 and 1 at 1 Hz **D7**: **ERROR6** alarm status (when peeling, the current weight display is unstable) **D6**: **ERROR3** alarm status (when clearing, the current weight is not stable) **D5**: **ERROR2** alarm status (when clearing, the current weight is out of the clearing range) **D4**: Gross/net weight **D3**: Weight symbol bit **D2**: Zero point (weight in the range of **0**+/- quarter **d**) **D1**: overflow state (abnormal weight or sensor)

		D0: Weight stability marker
DINT	Sensor millivolts (Read only)	**4** bytes of sensor millivolts data
DINT	Read out values (read only)	The master station requests the data returned by the meter, and obtains the value according to the "address requested to read".
DINT	Functional operation (writable only)	**D15**: IO reset **D14**: Parameter reset **D13**: Calibration reset **D12**: Reset all **D4-D11**: Hold **D3**: Gross net weight switch **D2**: Skin clearing **D1**: Remove the skin **D0**: Zero
DWord	The request to write value of the modbus address	Write value address,refer to section 6.1.2 modbus address sheet.
DWord	Input value	Input value to the request to write value of the modbus address, refer to section 6.1.2 modbus address sheet.

UDINT	The read request of the modbus address	Read address, ,refer to section 6.1.2 modbus address sheet.

6.3.1.2 Acyclic Parameter list

Parameter Names	Parameter Description
Other parameters refer to section 6.2.1.2 **EIP Non-cyclic parameters list**.	
AD Sampling Rate	Range: **0-5** Initial value: **2**
NET indicator function switch	Range: **0-1** Initial value: **0**
Remote calibration switch	Range: **0-1** Initial value: **0**

6.3.2 Device description file ESI

The **GMT-P1** equipment description file and the **detailed steps for using PLC and Twincat** can down load at www.gmweighing.com

6.4 CCLINK IE Communication

When CCLink IE Field Basic is selected for extended communication, it can communicate with PLC. At this time, the instrument IP, PC and PLC must be in the same LAN. The instrument IP address can be set and viewed in SETUP working parameters F2.1~F2.4; the MAC address

can be viewed in F2.5~F2.10. After the project connection is successfully established, the parameters can be configured according to the following parameter addresses

This instrument occupies one link station, and each link point can reach up to 4K words. It can be applied to small-scale equipment that does not require high-speed control. CC-Link IE cyclic communication is realized by software, and the communication speed reaches 100Mbps.

6.4.1 Compact Version Parameter address

Offset	Parameter	Data type	Description
Weight and status parameters (read register, I address)			
RWr0-RWr1	Currently show weight	DWord	Weight currently displayed, 999999, -9999999 when positive and negative overflow
RWr2-RWr3	Weight status flag bit	Word	D4 to D15: Reserved
			D3: Displayed weight symbol, (1 shows the weight is negative)
			D2: Zero, (weight in the range of 0+/- quarter d)
			D1: Weight overflow flag position
			D0: Stable

RWr4-RWr5	Loadcell voltage value data	DWord	Signed numbers, integers, four decimal points
RWr6-RWr7	Read out value	DWord	The master station requests the data returned by the meter, the value obtained according to the "address requested to read"
RWr8-RWr9	Write the status of modbus	DWord	Write data Return status 0: No error 1: register address illegal 2: parameter error
RWr10-RWr11	Communication heartbeat	DWord	After the connection is established, the value of the communication heartbeat switches between 0 and 1 at a frequency of 1 Hz
Function operation parameters (write register, Q address)			
RY0	Function operation	DWord	D15: IO module reset
RY1			D14: parameter reset
RY2			D13: Calibration reset
RY3			D12: Reset all
RY4- RYB			D4~D11: reserved

RYC			D3: Gross/net weight switch
RYD			D2: Clear tare
RYE			D1: Tare
RYF			D0: Zero
RWw0-RWw1	Request written value modbus address	DWord	Write operation address for Modbus, refer to 6.1.2 Register Read/Write Operation Address table
RWw2-RWw3	Input data	DWord	Modbus write operation value, write this data to "modbus address of the value requested to write", refer to 6.1.2 Register Read/Write operation address table
RWw4-RWw5	Address of the request to read	DWord	Read operation address for Modbus, refer to 6.1.2 Register Read and Write Operation Address table

6.4.2 Acyclic parameter lists

CCLink IE Field Basic **non-cyclic parameters list**

Parameters	Description
Power-Up Zero ON/OFF	range: 0-1, 0: OFF 1: ON; initial value: 0
Zero track range	range: 0-9; initial value: 0
Stable range	range: 0-9; initial value: 1
Zero range	range: 0-99; initial value: 50
Digital Filter	range: 0-9; initial value: 5
Defibrillate Filter Level	range: 0-9; initial value: 0
Decimal Point	range: 0-4; initial value: 0
Resolution	range: 1,2,5,10,20,50; initial value: 1
Full Scale	range: 1-Resolution*1000000; initial value: 10000
Zeroing/tare password protect	range: 0-1, 0: OFF 1: ON; initial value: 1

ON/OFF	

6.4.3 Device Description File CSP

The device description file and connection method of GMT-P1 can be downloaded from the website of Shenzhen German Technology Co., Ltd. (www.szgmt.com)

7 Password Input and Setting Reset

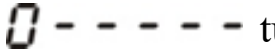
7.1 Password Input

(1) Calibration and working parameters setting default password: **000000.**

(2) User can set password in parameters when **F3.1** is "ON**".**

(3) When display is "PASS", need to input correct password to enter parameters.

Note:

(1) When input password, if first time wrong, it will go to the second chance for password input(display from  turn to ).

(2) If second input wrong, it will enter into interface for inputting password the third time. (1) When input password wrong, it will enter into interface for inputting password the third time

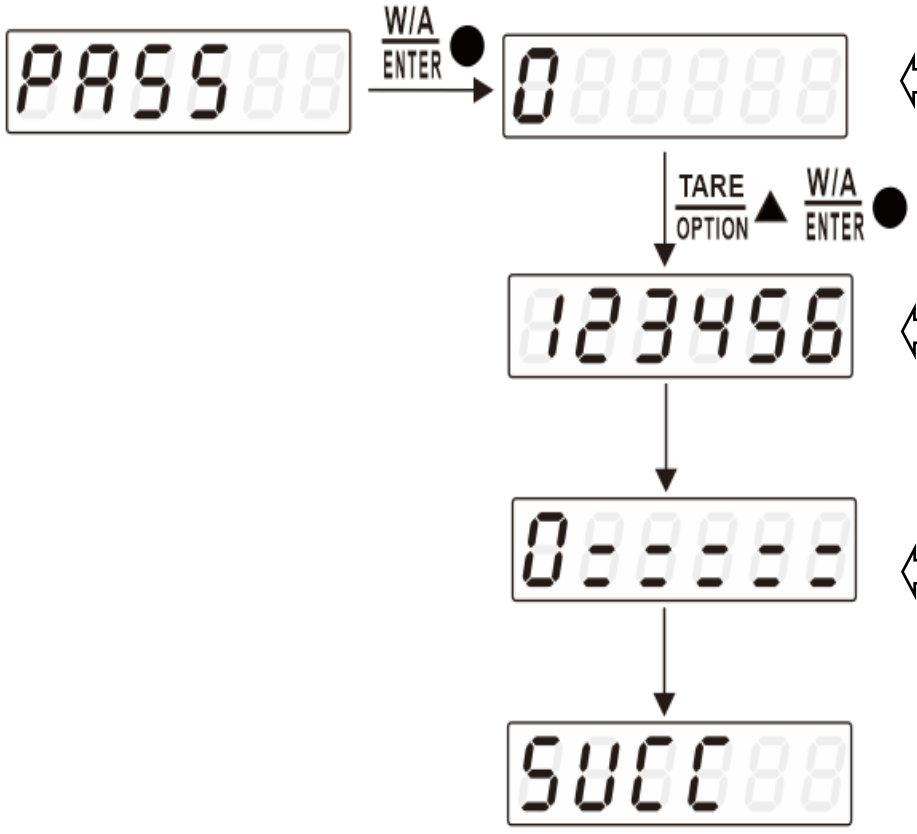
(Display change from  to ).

(3) If Input wrong for three times, main display show "**Error4**" and self-lock, but user can operate when power on again.

7.2 Password Setting

(1) User can set password in parameters when **F3.1 is** "ON**".**

(2) User must input same new password twice in setting password,If not same, if not same, main display show"**Error**",one second and return to **PASS** again.



Display "**PASS**", press W/A ENTER to the password interface.

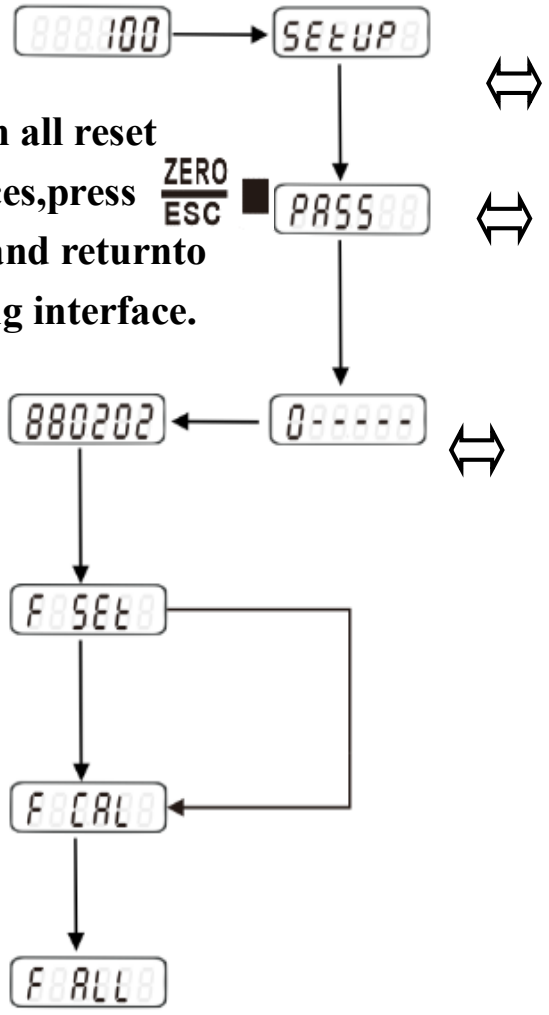
Enter the six digit password with TARE OPTION and MODE and press W/A ENTER to save the second password .

Enter the same six digit password, press W/A ENTER to complete password setting.

7.3 Factory Reset

Note: Factory reset is only for special technicists, which will reset all of parameters and

will maybe cause not working.



Note: In all reset interfaces,press ZERO/ESC to exit and returnto weighing interface.

Take reset all for example:

Press MODE▶ and W/A/ENTER ● the same time to display'**PASS**', then password input.

Password input interface, input fixed password **880202,** then **press** W/A/ENTER ● save password and enter parameter reset.

1) In **F SEt** interface, pressto reset working parameters, enter into reset calibration parameters interface**.**

2) In **F SEt** interface, press MODE▶, not to make working parameter reset, enter into calibration para. Reset interface.

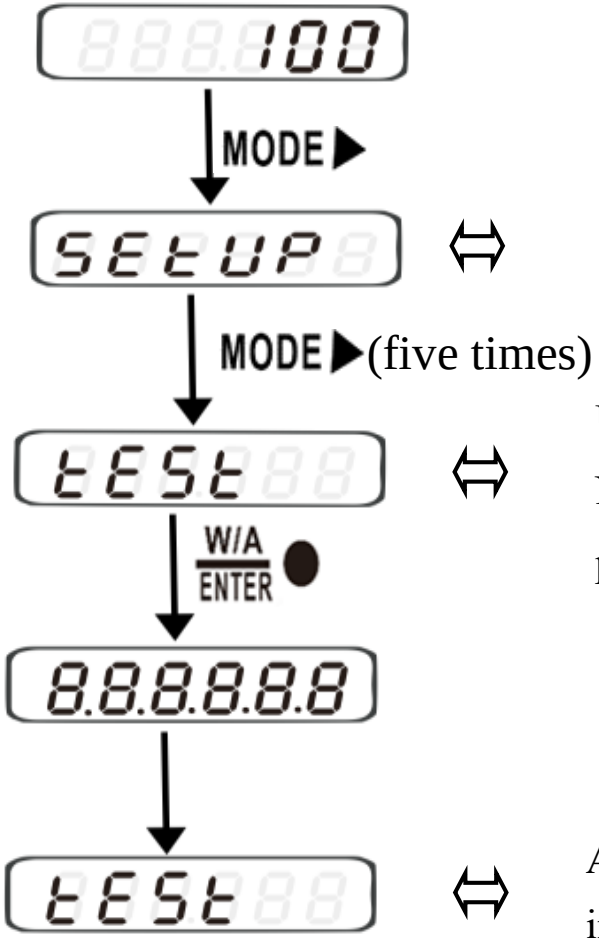
1) In **F CAL** interface, press W/A/ENTER ● to reset calibration para., enter into reset all interface.

2) In **F CAL** interface, press MODE▶, not to make calibration para. reset, enter into reset all interface.

1) In **F ALL** interface, press W/A/ENTER ● to make reset all of the parameters (including working para., calibration para., I/O etc...

8 Display Testing

The following flow chart is to test lights on main-display and status lights.



Under parameter interface, press MODE▶ to switch to "*t*ES*t*" interface.

Under**"*t*ES*t*"**interface,press W/A ENTER to make display testing, Nixie tube display and indicator lights all shine. Now if press W/A ENTER, display will flicker.

After testing is finished, press ZERO ESC to return to"*t*ES*t*" interface.

9 Errors and Alarm Messages

Error ①Input error.

②wrong data beyond parameter range.

Error2 The current weight value is out of zeroing range.

Error3 Current weight is not stable when zeroing.

Error4 Input wrong password more than 3 times.

Error5 Overlimit when tare.

Error6 Weight value is not stable when tare.

Error7 Calibration lock defined, wait for this signal to be valid

OFL Weighing value is positive overflow.

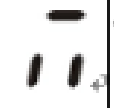
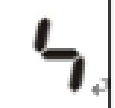
-OFL Weighing value is negative overflow.

10. Indicator model user-defined function

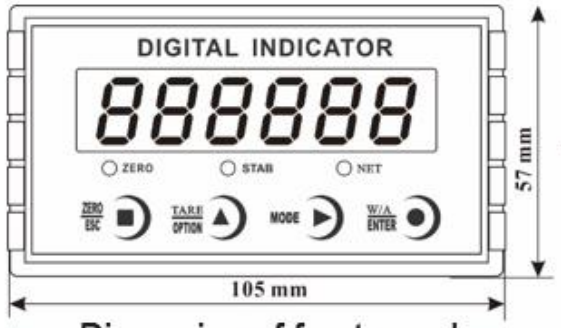
You can customize the model content displayed on the instrument by performing relevant operations on the instrument,. The steps are as follows.

After powering on, flash 8 twice, and then display the model. After displaying the model for 3 seconds, enter the menu interface. Long press the MODE key to display the "LOGO" in the menu interface,. You can customize the 6-digit main display character, and use the MODE key to adjust and select a certain character.After saving the changes, the instrument will display the changed model when booting up; If no modifications are made to the instrument model, the instrument will default to GMT-P1 (note: resetting does not reset the instrument model)

Displays character comparison table

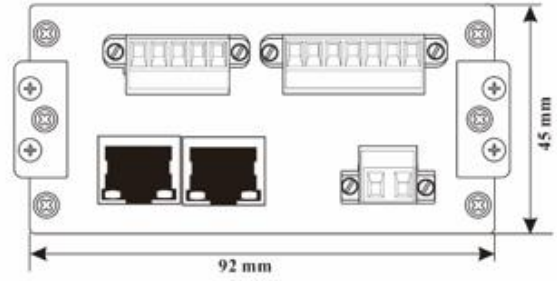
a	b	c	d	e	f	g	h	i	j	k	l	m
												
n	o	p	q	r	s	t	u	v	w	x	y	z
												

11 Dimension of Indicator



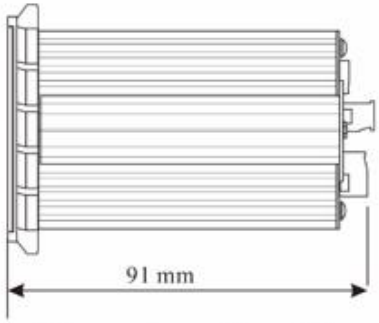
Dimension of front panel

(mm) : 105×57



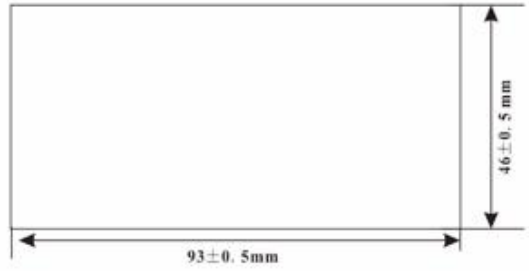
Dimension of rear panel

(mm) : 92×45



Dimension of profile

(mm) : 91



Mounting hole size

(mm) : 93×46