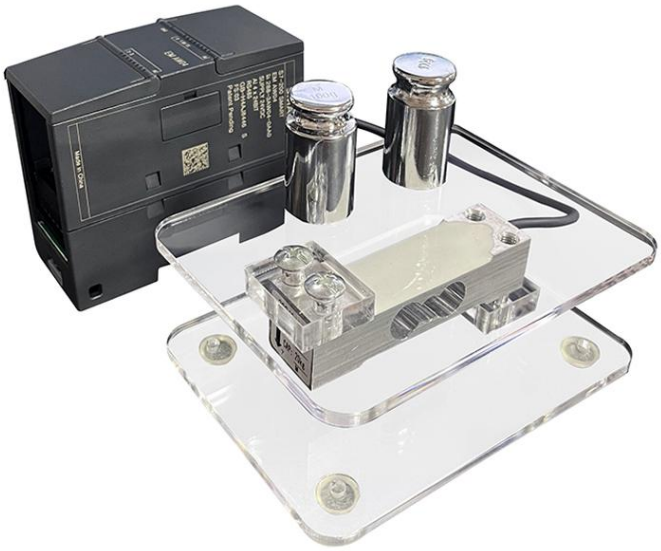
Gongbei EM AW01/2/4 Weighing Module

User Manual 060925



1.Weighing Module Overview

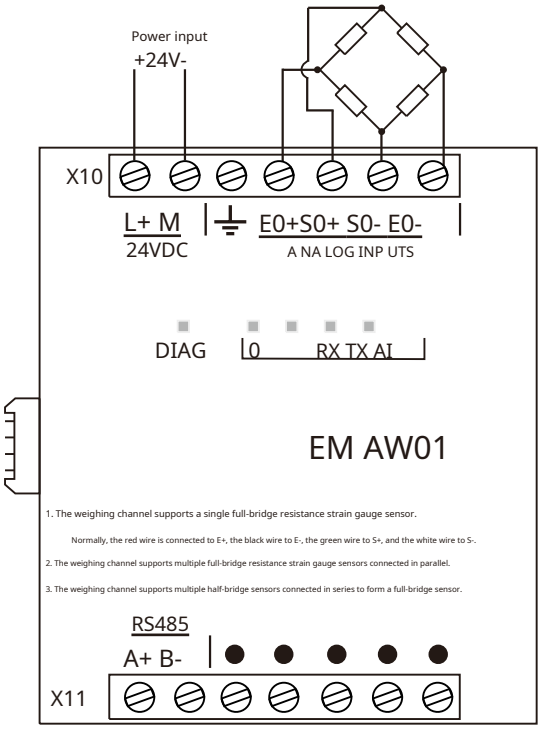
The GONGBEI EM AW01/2/4 weighing module can be connected to 1/2/4 channels of 4-wire resistance strain gauge pressure sensors. These sensors have resistance strain gauges attached to their bridge arms. When pressure is applied to the bridge arms, the strain gauges deform, resulting in a slight change in resistance. By measuring this change in resistance, the magnitude of the pressure is determined.

The weighing module has two communication ports, which can transmit the converted weight value; 1.

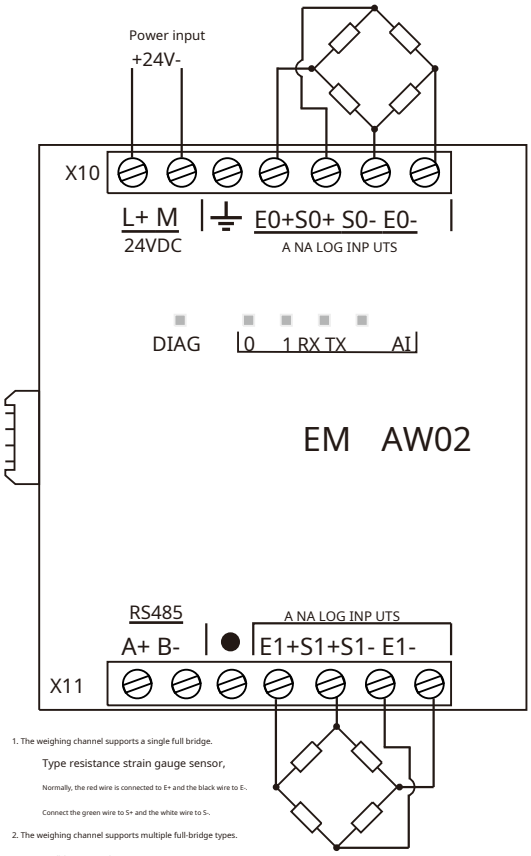
The left expansion interface can be directly plugged into the back of the SmartPLC.

2. The Modbus RTU 485 slave interface can connect to devices that support the master protocol. Either interface can be used, or both can be used simultaneously. If using a SmartPLC system, it is recommended to use the first interface. If using a configuration panel to communicate directly with the weighing module, or using other brands of PLCs and devices that support the Modbus RTU 485 master, then choose the second interface. The two interfaces are described separately below; you can refer to only the relevant section depending on which interface you are using.

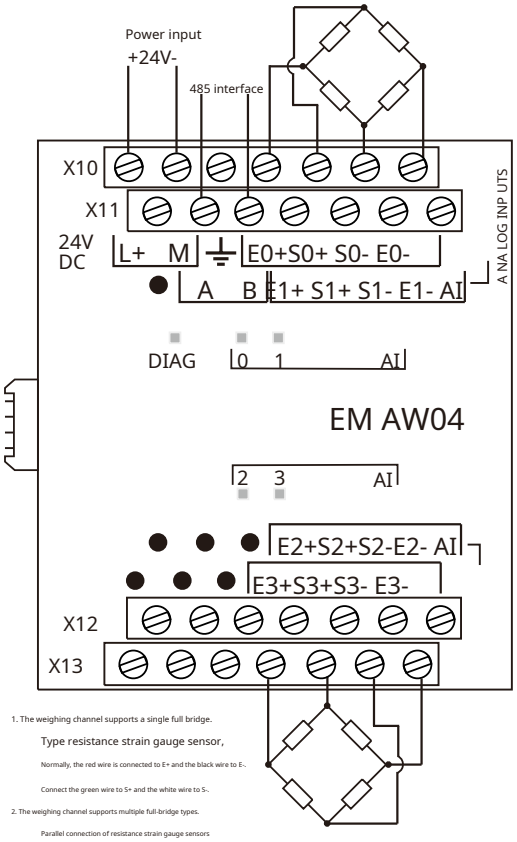
2.Wiring diagram and terminal definition



1. The weighing channel supports a single full-bridge resistance strain gauge sensor.
   Normally, the red wire is connected to E+, the black wire to E-, the green wire to S+, and the white wire to S-.
2. The weighing channel supports multiple full-bridge resistance strain gauge sensors connected in parallel.
3. The weighing channel supports multiple half-bridge sensors connected in series to form a full-bridge sensor.



1. The weighing channel supports a single full bridge.
   Type resistance strain gauge sensor,
   Normally, the red wire is connected to E+ and the black wire to E-.
   Connect the green wire to S+ and the white wire to S-.
2. The weighing channel supports multiple full-bridge types.
   Parallel connection of resistance strain gauge sensors
3. The weighing channel supports multiple half-bridge sensors connected in series to form a full-bridge sensor.



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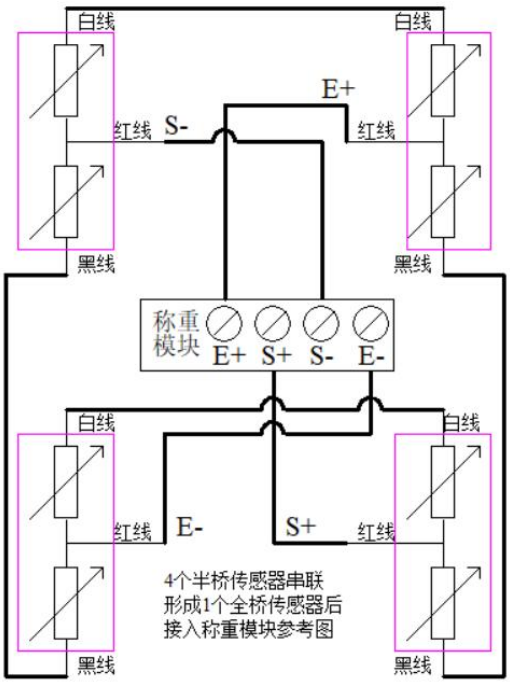

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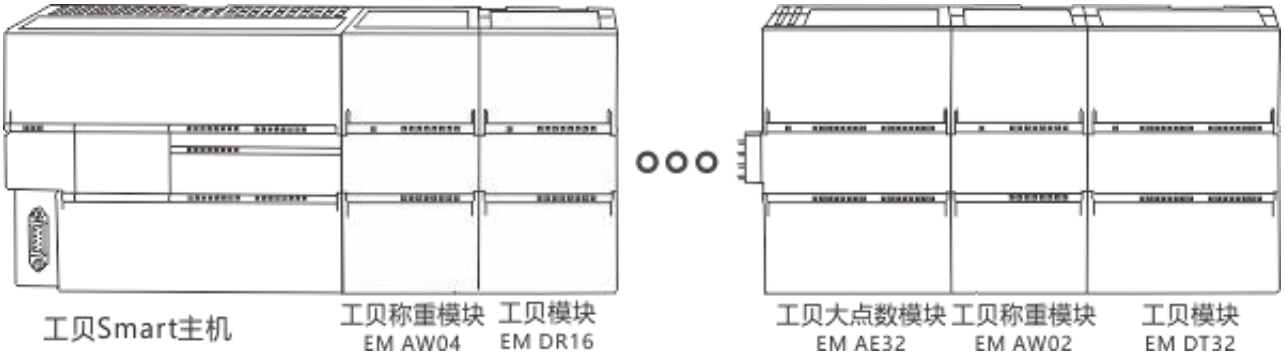
Terminal and interface definitions					
L+	24V+ power supply	En+	The nth sensor excitation is positive	A	485 communication port A+ signal
M	24V power supply	Sn+	The nth sensor signal is positive.	B	485 Communication Port B - Signal
⏚	Connecting to the Earth	Sn-	The nth sensor signal is negative.	●	Empty terminal
		En-	The nth sensor excitation negative	8 needle holes on the left side	Can be directly plugged into smart PLC expansion port

3.Technical parameters

Weighing module	EM AW01/2/4	
Communication interface	The left-side expansion port allows direct connection to a Smart PLC, which can be configured in the system block EM DP01.	Modbus RTU slave 485 interface
Communication speed	Super fast	High baud rate is fast, low baud rate is slow
Weighing acquisition speed	Sampling time coefficient (0 corresponds to 100ms, 3 corresponds to 400ms), filtering coefficient (0~3, 3 is the deepest filtering).	
Number of channels	EM AW01 is a single-channel device; EM AW02 is a single-channel device; EM AW04 is a single-channel device.	
Support Sensor type	1. A single 4-wire full-bridge resistive strain sensor is connected. 2. Multiple (usually 4) 3-wire half-bridge resistive strain sensors are connected in series to form a full-bridge sensor; 3. Multiple (usually 4) 4-wire full-bridge resistive strain sensors are connected in parallel.	
Excitation sensor signal	The weighing module provides a sensor excitation voltage of 5VDC and a maximum current of 100mA. The weighing sensor output signal is less than ±10mV.	
accuracy	0.03% of full scale	
resolution	24-bit, effective resolution 19-bit	
Sensor wire length	Maximum 100 meters	
Whether to isolate	non-isolation	
DIAG indicator light	**Green light always on:**The left-side expansion interface of the module has communication capability, and EM DP01 has been configured. Power supply is normal, and there are no errors. **Green light flashing:**Using the left-side expansion interface indicates that the Smart host is not configured or is configured incorrectly. Using the 485 interface indicates that the "Indicator Light" button has been clicked in the SmartPlatform debugging software. **Green light off:**The expansion interface on the left side of the module has no communication (the power is off when the Smart PLC is not plugged in on the left side) or the communication is abnormal (unplug the module and check if the connector pins are deformed or dented). **Red flashing:**Module power supply error (user power alarm needs to be selected in the system block); or channel error;	
Weighing input channel refers to indicator lights	**Green light always on:**Power supply and channel data are normal. **Red flashing:**Alarms triggered by abnormal or excessive power supply to the module.	
Operating power supply and power consumption	24VDC (limited voltage 18VDC~28VDC), 1.5W	
Dimensions (width * height * depth)	45 (excluding the left plug portion) × 100 × 81; 55 (including the left plug portion) × 100 × 81;	

4.Use via the left-side extension interface



When using it, EM DP01 needs to be configured in the system block. The starting address of the register varies depending on the slot it is connected to, as shown in the table below.

Slot number	Status register start address (read-only)	Control register start address (write only)
EM0	VB7000	VB7064
EM1	VB7128	VB7192
EM2	VB7256	VB7320
EM3	VB7384	VB7448
EM4	VB7512	VB7576
EM5	VB7640	VB7704
EM6 (only supports Gongbei Smart host)	VB7768	VB7832
EM7 (only supports Gongbei Smart host)	VB7896	VB7960
EM8 (only supports Gongbei Smart host)	VB8024	VB8088
EM9 (only supports Gongbei Smart host)	VB8152	VB8216
EM10 (only supports Gongbei Smart host)	VB8280	VB8344
EM11 (only supports Gongbei Smart host)	VB8408	VB8472

The register addresses in the table below are for example, with the module connected to slot EM0. If it is connected to other slot numbers, you can calculate the addresses yourself based on the starting addresses in the table above. Alternatively, you can view the table file "Address Table for Different Slot Numbers When Using DP Interface for Weighing Module.xlsx" in this directory, select the slot number, and the address table will be automatically generated.

Status register (Read-only, note that it is a read-only register.The register addresses in this table are based on the module being connected to the EM0 slot as an example.)	
VD7000	The weight value for channel 0 is a signed 32-bit integer; it is in units of the calibration weight and magnified 1000 times; the actual value = weight value / 1000.
VD7004	The weight value for channel 1 is a signed 32-bit integer; it is in units of the calibration weight and magnified 1000 times; the actual value = weight value / 1000.
VD7008	The weight value for channel 2 is a signed 32-bit integer; it is in units of the calibration weight and magnified 1000 times; the actual value = weight value / 1000.
VD7012	The weight value for channel 3 is a signed 32-bit integer; it is in units of the calibration weight and magnified 1000 times; the actual value = weight value / 1000.
VD7016	The raw, unconverted AD acquisition value of channel 0, i.e., real-time internal code, is an unsigned 32-bit integer with a resolution of 24 bits and a range of 0-16777215.
VD7020	The raw, unconverted AD acquisition value of Channel 1, i.e., real-time internal code, is an unsigned 32-bit integer with a resolution of 24 bits and a range of 0-16777215.
VD7024	The raw, unconverted AD acquisition value of Channel 2, i.e., real-time internal code, is an unsigned 32-bit integer with a resolution of 24 bits and a range of 0-16777215.
VD7028	The raw AD acquisition value of channel 3, without conversion, i.e., real-time internal code, is an unsigned 32-bit integer with a resolution of 24 bits and a range of 0-16777215.
VD7032	Channel 0 range value, an unsigned 32-bit integer, in units of calibration weight, used for over-range detection and zero-point tracking.

VD7036	Channel 1 range value, unsigned 32-bit integer, in units of calibration weight, used for over-range detection and zero-point tracking.				
VD7040	Channel 2 range value, unsigned 32-bit integer, in units of calibration weight, used for over-range detection and zero-point tracking.				
VD7044	Channel 3 range value, unsigned 32-bit integer, in units of calibration weight, used for over-range detection and zero-point tracking.				
VB7048	Channel 0 filter coefficient; 0~3, default 2.3 is the strongest filter.				
VB7049	Channel 1 filter coefficients; 0~3, default 2.3 is the strongest filter.				
VB7050	Channel 2 filter coefficients; 0~3, default 2.3 is the strongest filter.				
VB7051	Channel 3 filter coefficients; 0~3, default 2.3 is the strongest filter.				
VB7052	Sampling time coefficient: 0~3, default 2.3 is the longest sampling time. The longer the time, the slower the response, but the more stable the data.				
VB7053	Modbus slave address; 1-255, default 2.				
VB7054	The baud rates for the 485 port are: 0: 2400; 1: 4800; 2: 9600 (default); 3: 19200; 4: 38400; 5: 57600; 6: 115200				
VB7055	Stop bits for the 485 port: 0: 1 stop bit (default); 1: 2 stop bits				
VB7056	The parity bits for port 485 are: 0: odd parity; 1: even parity; 2: no parity (default).				
VB7060	Channel 0 Status Register	bit: (3～7)	bit:2	bit:1	bit:0
		Not used	1: Over-range;	1: Zero-point tracking enabled (effectively reduces zero-point deviation); 0: Disabled	1: Peeled; 0: Unpeeled
VB7061	Channel 1 Status Register	bit: (3～7)	bit:2	bit:1	bit:0
		Not used	1: Over-range;	1: Zero-point tracking enabled (effectively reduces zero-point deviation); 0: Disabled	1: Peeled; 0: Unpeeled
VB7062	Channel 2 Status Register	bit: (3～7)	bit:2	bit:1	bit:0
		Not used	1: Over-range;	1: Zero-point tracking enabled (effectively reduces zero-point deviation); 0: Disabled	1: Peeled; 0: Unpeeled
VB7063	Channel 3 Status Register	bit: (3～7)	bit:2	bit:1	bit:0
		Not used	1: Over-range;	1: Zero-point tracking enabled (effectively reduces zero-point deviation); 0: Disabled	1: Peeled; 0: Unpeeled

Control register (Write-only, note that it's write-only to registers.The register addresses in this table are based on the module being connected to the EM0 slot as an example.)	
VD7064	Channel 0 range setting value; 32-bit unsigned integer, in units of calibration weight weight.
VD7068	Channel 1 range setting value; 32-bit unsigned integer, in units of calibration weight weight.
VD7072	Channel 2 range setting value; 32-bit unsigned integer, in units of calibration weight weight.
VD7076	Channel 3 range setting value; 32-bit unsigned integer, in units of calibration weight weight.
VD7080	Channel 0: Calibration weight setting value; 32-bit unsigned integer; it is recommended to select a value greater than half the range for better accuracy.
VD7084	Channel 1: Calibration weight setting value; 32-bit unsigned integer; it is recommended to select a value greater than half the range for better accuracy.
VD7088	Channel 2: Calibration weight setting value; 32-bit unsigned integer; it is recommended to select a value greater than half the range for better accuracy.
VD7092	Channel 3: Calibration weight setting value; 32-bit unsigned integer; it is recommended to select a value greater than half the range for better accuracy.
VB7096	Channel 0 filter level setting; 0~3, 3 is the strongest filter, the default is 2.
VB7097	Channel 1 filter level setting; 0~3, 3 is the strongest filter, the default is 2.
VB7098	Channel 2 filter level setting; 0~3, 3 is the strongest filter, the default is 2.
VB7099	Channel 3 filter level setting; 0~3, 3 is the strongest filter, the default is 2.
VB7100	Sampling time coefficient setting: 0~3, default 2. A longer time results in a slower response but more stable data.

VB7120	Channel 0 enable switch register, bit-addressable 0 bit: Channel 0 Zero point calibration, =1 Enable, =0 No operation; 1 bit: Channel 0 Calibration weight calibration, =1 Enable, =0 No operation; 2 bit: Channel 0 Filter level modification, =1 Enable, =0 No operation; 3 bit: Channel 0 Range setting, =1 Enable, =0 No operation; 4 bit: Channel 0 Tare enable, =1 Tare, =0 No operation; 5 bit: Channel 0 Cancel tare, =1 Cancel tare, =0 No operation. 6-bit: Channel 0 zero-tracking switch toggles; =1 indicates the current zero-tracking state is on, so it is off; =1 indicates the current zero-tracking state is off, so it is on. =0 means no operation; 7-bit: Sampling time coefficient modification = 1 Enable = 0 No operation. This time is not for channel 0, but global.
VB7121	Channel 1 Enable Switch Register, bit-addressable, bits 0-6 are defined the same as Channel 1 Enable Switch Register; bit 7: reserved.
VB7122	Channel 2 enable switch register, bit-addressable, defined the same as Channel 1 enable switch register.
VB7123	Channel 3 enable switch register, bit-addressable, defined the same as Channel 1 enable switch register.
VW7124	Enable and factory reset registers: After a 100ms delay, the enable function will change to 16#4567. Based on the status of the four enable switch registers, the corresponding functions will be operated and parameters will be saved. After a 100ms delay, the enable function will change to 16#4567, restoring and saving factory settings.

Note 1 The scale initialization steps are as follows: First, place nothing on the scale and perform zero-point calibration. Second, place a known weight on the scale and perform weight calibration. After these two steps, the zero point and an intermediate point are fixed, and the correspondence between the sampled value and the weight value is uniquely determined.

Note 2 The two tables above, "Status Register" and "Control Register," seem to contain many registers with the same meaning. Why can't they be merged into one register? This is because the registers in the DP01 communication protocol are either read-only or write-only; they cannot be both read-and-write. For example, the VD7064 register in the table above shows a value of 0 in the programming software's status table, but this does not necessarily mean that the range of channel 0 of the EM AW04 module is 0 at this time. You need to look at the VD7032 register.

Explanation 3 Then why is there an enable switch register in the "Control Register" table? This is because the "Control Register" table only records attributes. If this switch register didn't exist, when the PLC powers on and runs, the VD7064 defaults to 0, and the host will directly write to the EM AW04 module according to the DP01 protocol, causing the range to become 0. Therefore, a switch is added to ensure that it's the register the user actually wants to change. To prevent malfunctions, the VW7124 register is added to ensure reliability. Still confused? Don't worry, just follow the example below; it's very simple.

Example 1: Perform a zero-point calibration operation on channel 2. First, clear VB7120, VB7121, VB7122, and VB7123 to 0. Then set V7122.0 to 1.The second step,First, write 16#0123 into the enable operation register VW7124. Write 16#4567 again after a 100ms interval. Done.

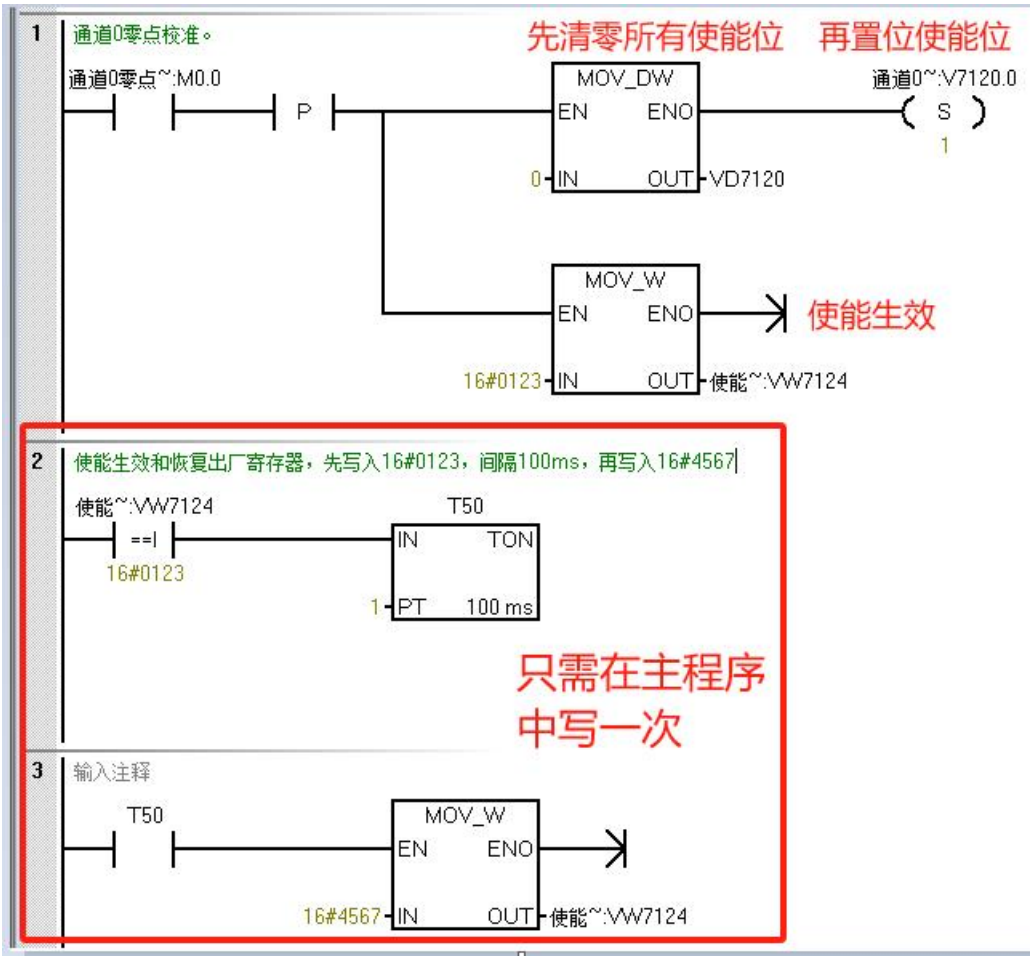
Example 2: Calibrate the weight of the weight placed on channel 0.first step Assign a weight to the VD7080.Step 2 First, clear VB7120, VB7121, VB7122, and VB7123 to 0, then set V7120.1 to 1;Step 3 First, write 16#0123 to VW7124, then after a 100ms interval, write 16#4567. Done.

Example 3: Channel 0 peeling operation. First, clear VB7120, VB7121, VB7122, and VB7123 to 0, then set V7120.4 to 1. The second step: First, write 16#0123 to VW7124.100ms intervalThen write 16#4567. Finish.

Example 4: Zero-point tracking for channel 0 is enabled. The first step is to read the status of V7060.1, because setting V7120.4 to 1 will toggle the switch; if it was previously on, it will become off, and vice versa. If the current status is 0 (off), proceed to the next step. The second step is to clear VB7120, VB7121, VB7122, and VB7123 to 0, then set V7120.4 to 1. The third step is to write 16#0123 to VW7124, then after a 100ms interval, write 16#4567. Done.

Example 5:I want to assign range values to 4 channels simultaneously.first step Assign values to VD7064~VD7076.Step 2 First, clear VB7120, VB7121, VB7122, and VB7123 to 0, then set V7120.3, V7121.3, V7122.3, and V7123.3 to 1;Step 3 The VW7124 first writes 16#0123, waits 100ms, and then writes 16#4567. This completes the process. Therefore, it can operate on a single register or multiple registers simultaneously.

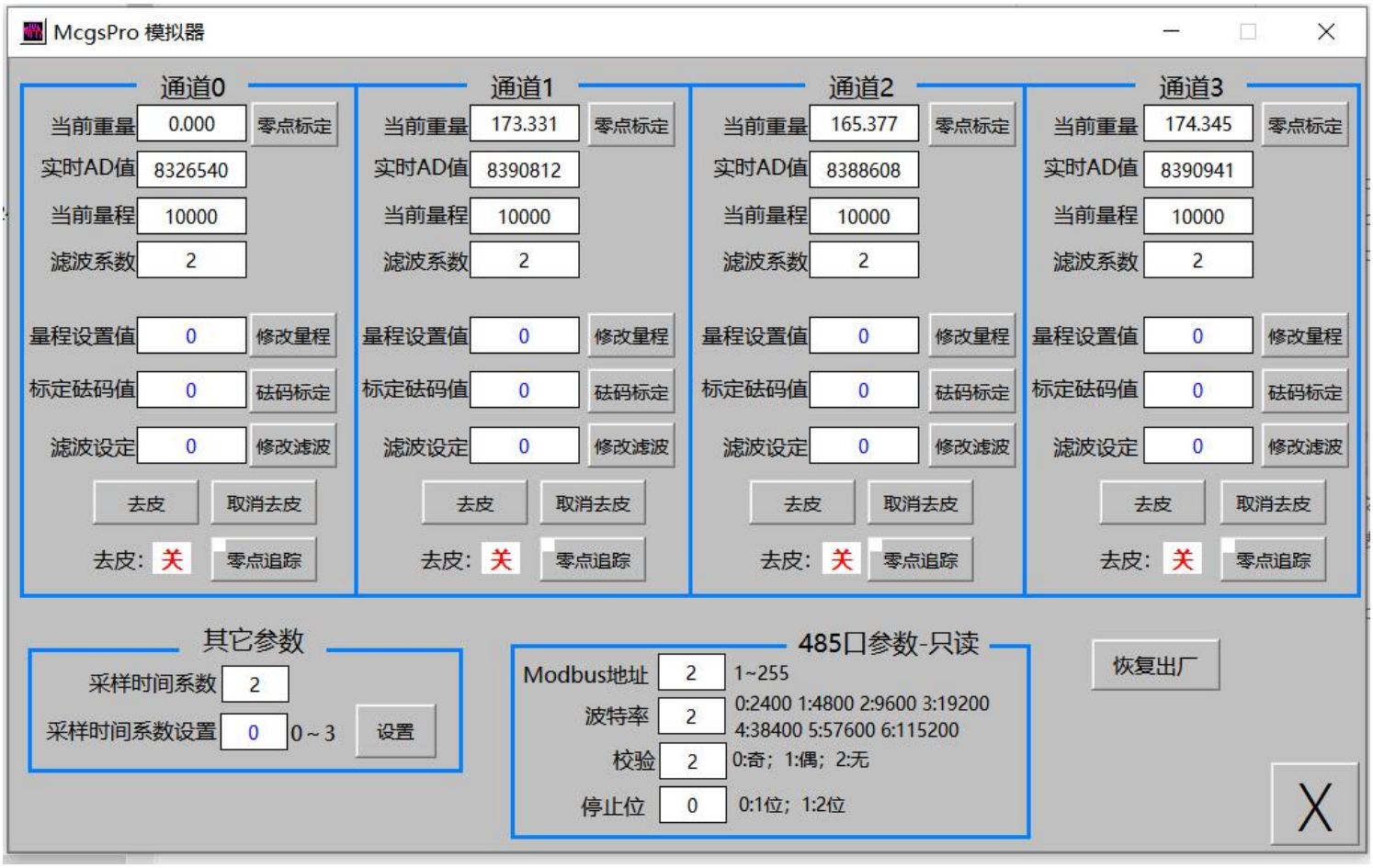
Example 6: Having learned how to implement the function through the examples above, how do we program it? It's also very simple. Take channel 0 zero-point calibration as an example, as shown in the following figure.



In Network 1, assigning a value of 1 to M0.0 initiates zero-point calibration for Channel 0. Networks 2 and 3 only need to be written once in the main program, constantly checking for enable operations; it's very simple. See the file "工贝秤秤模测试.smart" in this directory for more details.

program.

Example 7: How to program the configuration software? It's very simple. This directory provides an MCGS case study, "Gongbei Weighing Module MCGS Configuration Software Test Case.MCP," which can be run on a computer. You also need to download the PLC program, "Gongbei Weighing Module Test.smart," to the PLC, and the weighing module must be connected to the EM0 slot. Then you can test. The test interface is shown in the following figure.



Note 4: The tare, cancel tare, zero-point calibration enable, and calibration weight calibration enable functions in the channel enable switch register cannot be enabled simultaneously; simultaneous operation is invalid.

5.pass485Interface usage

The EM AW01/2/4 weighing module comes with one built-in RS-485 interface, supporting the Modbus RTU slave standard protocol. It supports communication with any device that supports the Modbus RTU master protocol, such as PLCs, configuration panels, and host computers. The address table is as follows:

In the address (read-only) table for Zone 3, 30001 represents address number 1 in Zone 3.			
30001	high byte	Weight value of channel 0	32-bit signed integer; the value is magnified 1000 times relative to the unit of the range register; actual value = weight value / 1000;
30002	low byte		
30003	high byte	Weight value of channel 1	
30004	low byte		

30005	high byte	Weight value of channel 2	
30006	low byte		
30007	high byte	Weight value of channel 3	
30008	low byte		
30009	high byte	Channel 0: Unconverted AD acquisition value, i.e., real-time internal code.	Unsigned 32-bit integer, 24-bit resolution, range 0~16777215
30010	low byte		
30011	high byte	Channel 1: Unconverted AD acquisition value, i.e., real-time internal code.	
30012	low byte		
30013	high byte	Channel 2: Unconverted AD acquisition value, i.e., real-time internal code.	
30014	low byte		
30015	high byte	Channel 3: Unconverted AD acquisition value, i.e., real-time internal code.	
30016	low byte		
30017	Channel 0 status register		0 bit: Tare state; =1 Tare state; =0 No tare state; 1 bit: Zero-point tracking state; =1 Enabled (effectively reduces zero-point deviation); =0 Turn off; 2 bits: Exceeding the range; =1 Exceeding the range; =0 Not exceeding the range; 3~15 bits: Reserved
30018	Channel 1 status register		Same as the "Channel 0 Status" register
30019	Channel 2 status register		Same as the "Channel 0 Status" register
30020	Status register of channel 3		Same as the "Channel 0 Status" register
30021	Communication status with Smart host		1: The DP01 expansion interface on the left is communicating; 0: The DP01 interface is not communicating.
30022	Device firmware version number		Decimal representation

In the 4th zone (read and write) table, 40001 represents address 1 in zone 4.		
40001	Modbus slave communication address	Value range: 1-255; default: 2;
40002	baud rate	0:2400; 1:4800; 2:9600 (default); 3:19200; 4:38400; 5:57600; 6:115200;
40003	Stop bit	0: 1 stop bit (default); 1: 2 stop bits;
40004	Check bit	0: Odd parity; 1: Even parity; 2: No parity (default);
40005	Sampling time coefficient	0~3, default is 2. 3 takes the longest time. The longer the time, the slower the response, but the more stable the system.
40006~40016	Custom device name	ASCII characters must not exceed 10 characters.
40017	Channel 0 Zero-point calibration enabled	=1 indicates calibration; =other indicates no operation.
40018	Channel 1 Zero-point calibration enable	=1 indicates calibration; =other indicates no operation.
40019	Channel 2 Zero Calibration Enable	=1 indicates calibration; =other indicates no operation.
40020	Channel 3 Zero-point calibration enable	=1 indicates calibration; =other indicates no operation.
40021	Channel 0 Weight Calibration Enable	=1 indicates calibration; =other indicates no operation.

40022	Channel 1 Weight Calibration Enable		=1 indicates calibration; =other indicates no operation.
40023	Channel 2 Weight Calibration Enable		=1 indicates calibration; =other indicates no operation.
40024	Channel 3 Weight Calibration Enable		=1 indicates calibration; =other indicates no operation.
40025	Channel 0 Peel Enable		=1 Peel; =Others, do nothing;
40026	Channel 1 Peel Enable		=1 Peel; =Others, do nothing;
40027	Channel 2 Peel Enable		=1 Peel; =Others, do nothing;
40028	Channel 3 Peel Enable		=1 Peel; =Others, do nothing;
40029	Channel 0: Cancel peening enable		=1 Cancel peeling; =Others, do nothing;
40030	Channel 1: Cancel peeling enable		=1 Cancel peeling; =Others, do nothing;
40031	Channel 2: Cancel peeling enable		=1 Cancel peeling; =Others, do nothing;
40032	Channel 3: Cancel peeling enable		=1 Cancel peeling; =Others, do nothing;
40033	Channel 0 Zero Tracking Switch		=1 Enables (effectively reduces 0-point deviation); =0 Disables;
40034	Channel 1 Zero Tracking Switch		=1 Enables (effectively reduces 0-point deviation); =0 Disables;
40035	Channel 2 Zero Tracking Switch		=1 Enables (effectively reduces 0-point deviation); =0 Disables;
40036	Channel 3 Zero Tracking Switch		=1 Enables (effectively reduces 0-point deviation); =0 Disables;
40037~40044 (Reserved)			
40045	Channel 0 filter coefficients		0~3, default 2. 3 indicates stronger filtering.
40046	high byte	Zero point calibration of channel 0	The zero-point calibration will update automatically after each operation, or you can manually enter the information. (Unsigned 32-bit integer)
40047	low byte	Value, i.e., zero-point internal code value	
40048	high byte	Channel 0 calibration weight	The weight value must be entered before calibrating the weights. (Unsigned 32-bit integer)
40049	low byte	quantity	
40050	high byte	The calibration weights in channel 0	The settings will update automatically after each weight calibration operation, or you can manually enter the information. (Unsigned 32-bit integer)
40051	low byte	code value	
40052	high byte	Tare weight of channel 0	The value will be automatically updated after each tare operation, or you can manually enter it. Unsigned 32-bit integer.
40053	low byte	Value, i.e., tare weight internal code value	
40054	high byte	Channel 0 range value	Unsigned 32-bit integer
40055	low byte		
40056	Channel 1 filter coefficients		0~3, default 2. 3 indicates stronger filtering.
40057	high byte	Zero point calibration of channel 1	The zero-point calibration will update automatically after each operation, or you can manually enter the information. (Unsigned 32-bit integer)
40058	low byte	Value, i.e., zero-point internal code value	
40059	high byte	Channel 0 calibration weight	The weight value must be entered before calibrating the weights. (Unsigned 32-bit integer)
40060	low byte	quantity	
40061	high byte	The calibration weights in channel 1	The settings will update automatically after each weight calibration operation, or you can manually enter the information. (Unsigned 32-bit integer)
40062	low byte	code value	
40063	high byte	Tare weight of channel 1	The value will update automatically after each tare operation, or you can manually enter it. Unsigned 32-bit integer.
40064	low byte	Value, i.e., tare weight internal code value	

40065	high byte	Channel 1 range value	Unsigned 32-bit integer
40066	low byte		
40067	Channel 2 filter coefficients		0~3, default 2. 3 indicates stronger filtering.
40068	high byte	Zero point calibration of channel 2 Value, i.e., zero-point internal code value	The zero-point calibration will update automatically after each operation, or you can manually enter the information. (Unsigned 32-bit integer)
40069	low byte		
40070	high byte	Channel 0 calibration weight quantity	The weight value must be entered before calibrating the weights. (Unsigned 32-bit integer)
40071	low byte		
40072	high byte	The calibration weights in channel 2 code value	The settings will update automatically after each weight calibration operation, or you can manually enter the information. (Unsigned 32-bit integer)
40073	low byte		
40074	high byte	Tare weight of channel 2 Value, i.e., tare weight internal code value	The value will update automatically after each tare operation, or you can manually enter it. Unsigned 32-bit integer.
40075	low byte		
40076	high byte	Channel 2 range value	Unsigned 32-bit integer
40077	low byte		
40078	Channel 3 filter coefficients		0~3, default 2. 3 indicates stronger filtering.
40079	high byte	Zero point calibration of channel 3 Value, i.e., zero-point internal code value	The zero-point calibration will update automatically after each operation, or you can manually enter the information. (Unsigned 32-bit integer)
40080	low byte		
40081	high byte	Channel 3 Calibration weight quantity	The weight value must be entered before calibrating the weights. (Unsigned 32-bit integer)
40082	low byte		
40083	high byte	The calibration weights in channel 3 code value	The settings will update automatically after each weight calibration operation, or you can manually enter the information. (Unsigned 32-bit integer)
40084	low byte		
40085	high byte	Tare weight of channel 3 Value, i.e., tare weight internal code value	The value will update automatically after each tare operation, or you can manually enter it. Unsigned 32-bit integer.
40086	low byte		
40087	high byte	Channel 3 range value	Unsigned 32-bit integer
40088	low byte		
40089	Save Parameter Register		Rewrite 0 to 16#1234 to perform a save operation in register 4; otherwise, the data will be lost after a power outage and restart.
40090	Reset register		Rewrite 0 to 16#9876 to perform a factory reset.

Note 1 Scale initialization steps: First, empty the scale and let it stand for at least 5 seconds, then perform zero-point calibration. Second, place a known weight on the scale and perform weight calibration. After these two steps, the zero point and an intermediate point are fixed, and the correspondence between the sampled value and the weight value is uniquely determined.

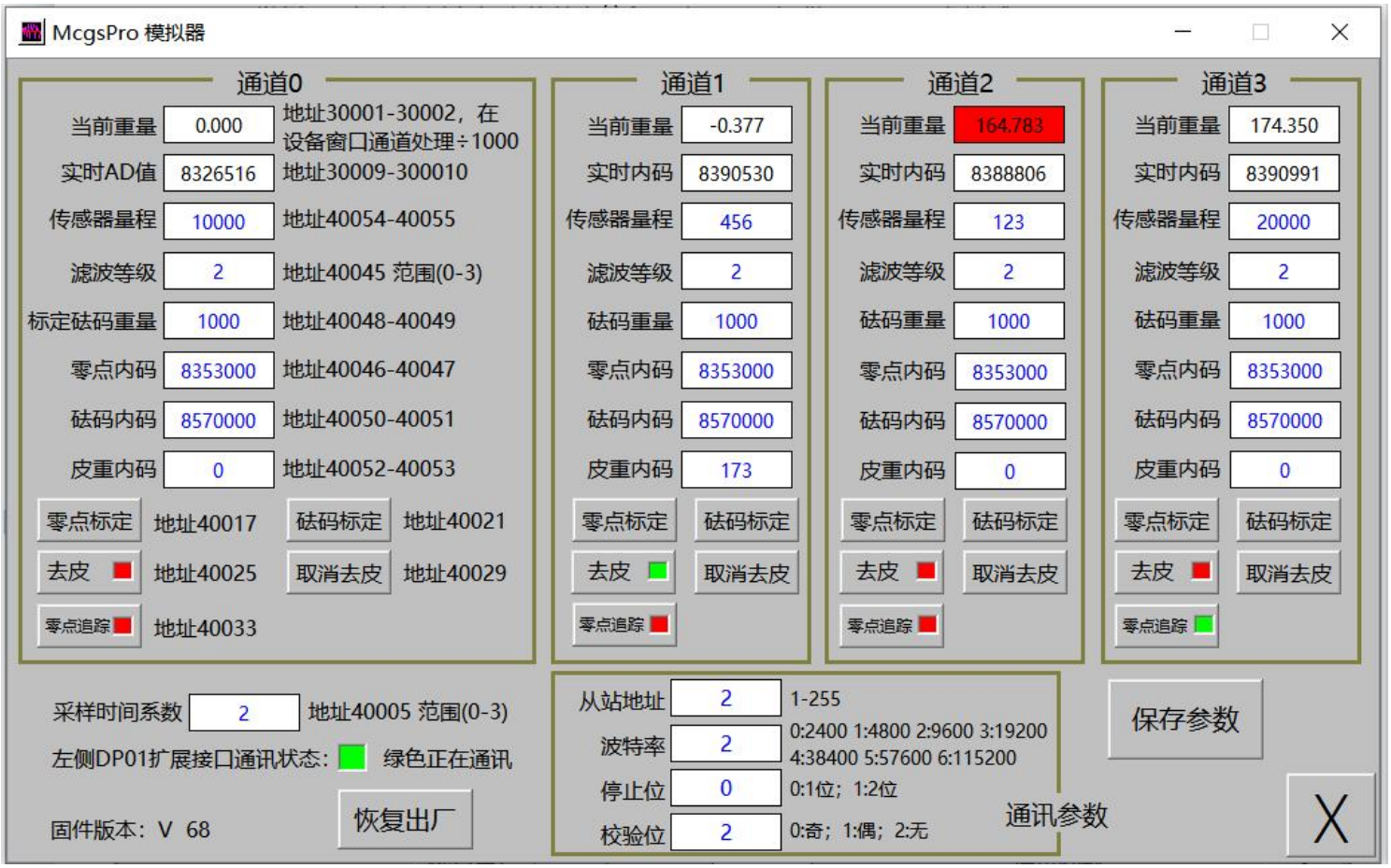
Note 2:4 Communication parameters written to the table do not take effect or save immediately; they require operation on the save parameter register to take effect and save. Other parameters take effect immediately upon writing, but are not saved immediately; they require operation on the save parameter register to save.

Example 1: Perform a zero-point calibration operation on channel 2. First, set register 40019 to 1. Second, to prevent loss of this setting in the event of a power outage, write register 40089 to 16#1234. Done.

Example 2: Calibrate the weight of the weight placed on channel 0. First, assign the weight of the weight to address registers 40048 and 40049. Second, set 40021 to 1. Third, to prevent loss of this setting in the event of a power outage, write 16#1234 to register 40089. Done.

Example 3: Tare the scale for channel 0. First, place the tare on the scale and set address 40025 to 1. Second, to prevent loss of this setting in case of power failure, write register 40089 to 16#1234. Done.

Example 4: How to program in configuration software? This directory provides an MCGS case study, "Gongbei EM AW04 Weighing Module MCGS Configuration Software Test Case.MCP", which can be simulated on a computer. Simply connect the computer to the weighing module's 485 interface to test, as shown in the image below.



6.Dedicated debugging software for weighing modules

Firstly, through485The communication cable connects the computer and the module.485Connect via port. Open the folder "工贝" in the downloaded data package.EM AW04"Weighing Module Debugging Software", double-click the run file "SmartPlatform.exeThis will open the debugging interface. See below.

After the connection is enabled, the icon will change from unconnected to connected, and the weighing module can be monitored once it is found.

7.Frequently Asked Questions

Question 1: When the zero-point tracking function is turned on, the scale still does not return to zero even when no weight is placed on it.

1. Answer: Check if the measuring range is not set or is too small, because it will only be effective when the current weight is below a certain percentage of the measuring range.

Question 2: Is it possible to alternate the positive and negative excitation wires and the positive and negative signal wires of a resistance strain gauge pressure sensor?

2. Answer: Generally, there is no problem.