

GONGBEI Standard Smart

Electrical equipment for industrial remote control operation in the electronics industry

User Manual 251013



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1.Product Selection

host model	series	Digital quantity	Analog quantity	485 mouths	network port	Extended Module	signal board	SD card	Order number
CR10XP	compact	6 inputs, 4 outputs (relay)	2 in, 1 out	Route 1	Route 1	Not supported	support	support	GB288-1CR10XP-0AA1
CR14XP		6 inputs, 4 outputs (relay)	2 in, 1 out	Route 1	Route 1	Not supported	support	support	GB288-1CR14XP-0AA1
CR20		12 inputs, 8 outputs from relays	-	Route 1	Route 1	Not supported	support	support	GB288-1CR20-0AA1
CR20XP		12 inputs, 8 outputs from relays	2 in, 1 out	Route 1	Route 1	Not supported	support	support	GB288-1CR20XP-0AA1
CR30		18 inputs, 12 outputs from relays	-	Route 1	Route 1	Not supported	support	support	GB288-1CR30-0AA1
CR30XP		18 inputs, 12 outputs from relays	4 In, 2 Out	Route 1	Route 1	Not supported	support	support	GB288-1CR30XP-0AA1
CR40		24 inputs, 16 outputs (relay)	-	Route 1	Route 1	Not supported	support	support	GB288-1CR40-0AA1
CR60		36 inputs, 24 outputs (relay)	-	Route 1	Route 1	Not supported	support	support	GB288-1CR60-0AA1
SR20	Standard type	12 inputs, 8 outputs from relays	-	Route 1	Route 1	support	support	support	GB288-1SR20-0AA1
ST20		12 inputs, 8 outputs	-	Route 1	Route 1	support	support	support	GB288-1ST20-0AA1
SR20XP		12 inputs, 8 outputs from relays	2 in, 1 out	Route 1	Route 1	support	support	support	GB288-1SR20XP-0AA1
ST20XP		12 inputs, 8 outputs	2 in, 1 out	Route 1	Route 1	support	support	support	GB288-1ST20XP-0AA1

SR20PRO		12 inputs, 8 outputs from relays	4 In, 2 Out	Route 1	Route 1	support	support	support	GB288-1SR20PRO-0AA1
ST20PRO		12 inputs, 8 outputs	4 In, 2 Out	Route 1	Route 1	support	support	support	GB288-1ST20PRO-0AA1
SR30	Standard type	18 inputs, 12 outputs from relays	-	Route 1	Route 1	support	support	support	GB288-1SR30-0AA1
ST30		18 inputs, 12 outputs	-	Route 1	Route 1	support	support	support	GB288-1SR30-0AA1
SR30XP		18 inputs, 12 outputs from relays	4 In, 2 Out	Route 1	Route 1	support	support	support	GB288-1SR30XP-0AA1
ST30XP		18 inputs, 12 outputs	4 In, 2 Out	Route 1	Route 1	support	support	support	GB288-1ST30XP-0AA1
SR40		24 inputs, 16 outputs (relay)	-	Route 1	Route 1	support	support	support	GB288-1SR40-0AA1
ST40		24 inputs, 16 outputs	-	Route 1	Route 1	support	support	support	GB288-1ST40-0AA1
SR40XP		24 inputs, 16 outputs (relay)	6 in, 2 out	Route 1	Route 1	support	support	support	GB288-1SR40XP-0AA1
ST40XP		24 inputs, 16 outputs	6 in, 2 out	Route 1	Route 1	support	support	support	GB288-1ST40XP-0AA1
SR60		36 inputs, 24 outputs (relay)	-	Route 1	Route 1	support	support	support	GB288-1SR60-0AA1
ST60		36 inputs, 24 outputs	-	Route 1	Route 1	support	support	support	GB288-1ST60-0AA1

Digital input/output module	describe	Configuration selection	Power consumption	Order number
EM DE08	8 Digital Inputs	EM DE08(8DI)	1.5W	GB288-2DE08-0AA0
EM DE16	16 Digital Inputs	EM DE16(16DI)	2.3W	GB288-2DE16-0AA0
EM DE32	32 Digital Inputs	EM DP01(DP)	3W	GB288-2DE32-0AA0
EM DR08	8 Relay Output	EM DR08 (8DQ Relay)	4.5W	GB288-2DR08-0AA0
EM QR16	16 Relay Output	EM QR16 (16DQ Relay)	4.5W	GB288-2QR16-0AA0
EM QR32	32 Relay Output	EM DP01(DP)	5W	GB288-2QR32-0AA0
EM DT08	8 transistor output	EM DT08 (8DQ Transistor)	1.5W	GB288-2DT08-0AA0
EM QT16	16 transistor output	EM QT16 (16DQ Transistor)	2.5W	GB288-2QT16-0AA0
EM QT32	32-transistor output	EM DP01(DP)	2W	GB288-2QT32-0AA0
EM DR16	8 digital inputs and 8 relay outputs	EM DR16 (8DI/8DQ Relay)	5.5W	GB288-2DR16-0AA0
EM DR32	16 digital inputs; 16 relay outputs	EM DR32 (16DI/16DQ Relay)	10W	GB288-2DR32-0AA0
EM DT16	8 digital inputs, 8 transistor outputs	EM DT16 (8DI/8DQ Transistor)	3.5W	GB288-2DT16-0AA0
EM DT32	16 digital inputs, 16 transistor outputs	EM DT32 (16DI/16DQ Transistor)	6.5W	GB288-2DT32-0AA0
Analog module	describe	Configuration selection	Power consumption	Order number
EM AE04	4. Input (supports voltage or current)	EM AE04(4AI)	1.5W	GB288-3AE04-0AA0
EM AE08	8 Inputs (Supports voltage or current)	EM AE08(8AI)	2W	GB288-3AE08-0AA0
EM AE16	16 Inputs (Supports voltage or current)	EM DP01(DP)	2.5W	GB288-3AE16-0AA0
EM AE32	32 Inputs (Supports voltage or current)	EM DP01(DP)	3W	GB288-3AE32-0AA0
EM AQ02	2. Output (supports voltage or current)	EM AQ02(2AQ)	1.5W	GB288-3AQ02-0AA0
EM AQ04	4. Output (supports voltage or current)	EM AQ04(4AQ)	2.1W	GB288-3AQ04-0AA0
EM AQ08	8. Output (supports voltage or current)	EM DP01(DP)	3W	GB288-3AQ08-0AA0
EM AM03	2 inputs, 1 output (supports voltage or current)	EM AM03(2AI/1AQ)	1.1W	GB288-3AM03-0AA0
EM AM06	4 inputs, 2 outputs (supports voltage or current)	EM AM06(4AI/2AQ)	2W	GB288-3AM06-0AA0
EM AM12	8 inputs, 4 outputs (supports voltage or current)	EM DP01(DP)	3W	GB288-3AM12-0AA0
EM AM16	8 inputs and 8 outputs (supports voltage or current)	EM DP01(DP)	3.5W	GB288-3AM16-0AA0
Temperature module	describe	Configuration selection	Power consumption	Order number
EM AR02	Temperature acquisition 2-channel PT100	EM AR02(2AI RTD)	1.5W	GB288-3AR02-0AA0
EM AR04	Temperature acquisition 4-channel PT100	EM AR04(4AI RTD)	1.5W	GB288-3AR04-0AA0

EM AR08	Temperature acquisition 8-channel PT100	EM AE08(8AI)	2W	GB288-3AR08-0AA0
EM AT04	Temperature acquisition using 4-channel K-type thermocouples	EM AT04(4AI TC)	1.5W	GB288-3AT04-0AA0
EM AT08	Temperature acquisition using 8 K-type thermocouples	EM AE08(8AI)	2W	GB288-3AT08-0AA0
EM AN04	Temperature acquisition 4-channel NTC	EM AE04(4AI)	1.5W	GB288-3AN04-0AA0
EM AN08	Temperature acquisition 8-channel NTC	EM AE08(8AI)	2W	GB288-3AN08-0AA0
EM AN16	16-channel NTC temperature acquisition	EM DP01(DP)	3W	GB288-3AN16-0AA0
EM EN88①	8 analog inputs, 8-channel NTC temperature acquisition	EM DP01(DP)	3W	GB288-3EN88-0AA0
EM EN4C①	Analog input 4, temperature acquisition 12-channel NTC	EM DP01(DP)	3W	GB288-3EN4C-0AA0
Weighing module	describe	Configuration selection	Power consumption	Order number
EM AW01②	Weighing data acquisition channel 1	EM DP01(DP)	2W	GB288-3AW01-0AA0
EM AW02②	Weighing data acquisition channel 2	EM DP01(DP)	2W	GB288-3AW02-0AA0
EM AW04②	Weighing data acquisition 4 channels	EM DP01(DP)	2W	GB288-3AW04-0AA0

Note① EM EN88/EN4C Naming: Among them EM Represents a module, E Indicates analog input. N express NTCenter, 4 Indicates analog input is 4 One channel, C express 16 number system 16#Ç correspond 10 number system 12, express 12 individual NTCaisle.

Note② EMAW01/2/4 Weighing The module usage instructions are quite long. , Not shown in this document, Please download from the website. 《Gongbei "Electronic Weighing Module User Manual" and " [Gongbei Electronics] Weighing Module Data Package "

Note: The table above requires configuration when used. EM DP01The extension module, referred to below Gongbei Large Points Module ,the remaining This is called a standard extension module.

Communication signal board	describe	configuration	Power consumption	Order number
SB CM01	One 485 or one 232 communication port	SB CM01	1W	GB288-5CM01-0AA0
SB CM02	Only one 485 communication port	SB CM01	1W	GB288-5CM02-0AA0
Digital signal board	describe	configuration	Power consumption	Order number
SB DE02	2. Digital Input	SB DT04	0.5W	GB288-5DE02-0AA0
SB DE04	4. Digital Input	SB CM01	0.8W	GB288-5DE04-0AA0
SB DE06	6. Digital Input	SB CM01	1W	GB288-5DE06-0AA0
SB QT02	2 transistor outputs	SB DT04	0.5W	GB288-5QT02-0AA0
SB QT04	4 transistor outputs	SB CM01	0.8W	GB288-5QT04-0AA0
SB QT06	6 transistor output	SB CM01	1W	GB288-5QT06-0AA0
SB DT04	2 digital inputs, 2 transistor outputs	SB DT04	1W	GB288-5DT04-0AA0
Analog signal board	describe	configuration	Power consumption	Order number
SB AE01-1AI	Analog Input 1 (Supports voltage or current)	SB CM01	1.5W	GB288-5AE01-0AA0
SB AE02-2AI	Analog Input 2 (Supports voltage or current)	SB CM01	1.5W	GB288-5AE02-0AA0
SB AE04-4AI	Analog Input 4 (Supports voltage or current)	SB CM01	2W	GB288-5AE04-0AA0
SB AE06-6AI	Analog input 6 (supports voltage or current)	SB CM01	2W	GB288-5AE06-0AA0
SB AQ01-1AQ	Analog Output 1 (Supports voltage or current)	SB CM01	2W	GB288-5AQ01-0AA0
SB AQ02-2AQ	Analog output 2 (supports voltage or current)	SB CM01	2W	GB288-5AQ02-0AA0
SB AQ04-4AQ	Analog output 4 (supports voltage or current)	SB CM01	3W	GB288-5AQ04-0AA0
SB AM03-2AI1AQ	Analog inputs: 2 (voltage or current) and 1 output (voltage and current).	SB CM01	1W	GB288-5AM03-0AA0
SB AM04-2AI2AQ	Analog inputs: 2 (voltage or current) 2 outputs (voltage and current)	SB CM01	1.5W	GB288-5AM04-0AA0

SB AM05-4AI1AQ	Analog inputs: 4 (voltage or current), 1 output (voltage or current)	SB CM01	1.5W	GB288-5AM05-0AA0
SB AM06-4AI2AQ	Analog inputs: 4 (voltage or current) and 2 (voltage or current) outputs.	SB CM01	2W	GB288-5AM06-0AA0
Temperature acquisition signal board	describe	configuration	Power consumption	Order number
SB AR02-2PT100	Temperature acquisition 2-channel PT100	SB CM01	2W	GB288-5AR02-0AA0
SB AR04-4PT100	Temperature acquisition via 4-channel PT100 (2-wire only)	SB CM01	2.5W	GB288-5AR04-0AA0
SB AN04-4NTC	Temperature acquisition via 4-channel NTC (10K, 3950)	SB CM01	2W	GB288-5AN04-0AA0
SB AN06-4NTC2AI	Temperature acquisition: 4-channel NTC (10K, 3950) 2-input (current only)	SB CM01	2.5W	GB288-5AN06-0AA0
SB AT04-4TC	Temperature acquisition using 4-channel K-type thermocouples	SB CM01	2W	GB288-5AT04-0AA0

Note: SBCM01, SB CM02, SB DE02, SB QT02, SB DT04. The usage method remains unchanged.

2. Host usage

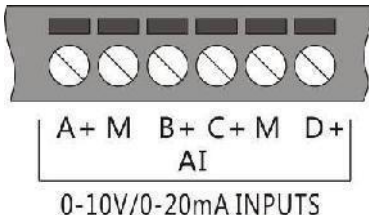
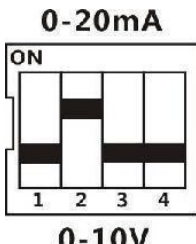
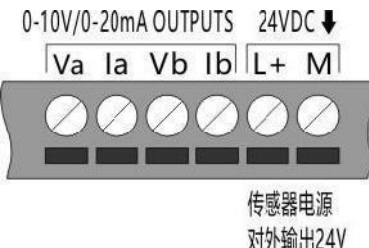
2.1 The host has built-in analog signal

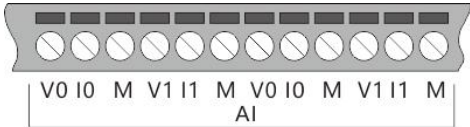
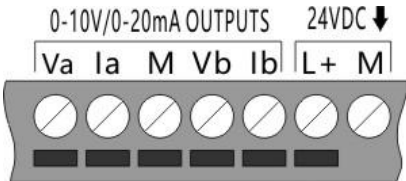
If the host model has "XP" or "PRO" as a suffix, it means that the host has a built-in analog channel. **Analog input start register address:** Starting with AIW0, for example, an SR30XP host with 4 analog inputs would have AIW0, AIW2, AIW4, and AIW6 as the starting addresses. **Register data range** 0~27648, corresponding to 0~10V or 0~20mA.

Analog output start register address: Starting from AQW0, **Use directly**. For example, SR30XP The host has two analog outputs, starting at addresses AQW0 and AQW2. The register data range is 0~27648, corresponding to outputs of 0~10V and 0~20mA. The maximum register value is 28200, corresponding to 20.4mA and 10.2V.

Analog filter coefficients: The host computer's built-in analog input allows for setting filter coefficients. For fast-responding analog signals, such as instantaneous pressure changes, the filter coefficient can be reduced. For signals requiring stable acquisition and strong anti-interference capabilities, such as temperature measurement, the filter coefficient can be increased. The filter coefficients are stored in special registers SMB1850~SMB1853, with values ranging from 0 to 3. 0 corresponds to the minimum filtering, and 3 corresponds to the maximum filtering time. The default value after restarting is 2. Each register corresponds to one channel. For example, on the SR30XP, the third analog input channel can be configured with different filtering levels by assigning values from 0 to 3 to SMB1852. Note: Register values are not saved after power loss and must be reassigned each time power is restored.

CR20XP, SR20XP, ST20XP mold	Terminal Definition	Corresponding register
	V0 Analog input number 1 aisle 0-10V enter.	AIW0
	I0 Analog input number 1 aisle 0-20mA enter.	
	V1 Analog input number 2 aisle 0-10V enter.	AIW2
	I1 Analog input number 2 aisle 0-20mA enter.	
	Va Analog output 0-10V Output.	AQW0
	Ia Analog output 0-20mA Output.	
	L Sensor output power 24V+	
	M Sensor output power 24V-The common terminal for analog inputs and the common terminal for analog outputs are shared by all three.	
Note: The common terminal for both analog input and output is the sensor power supply in the lower right corner.		of

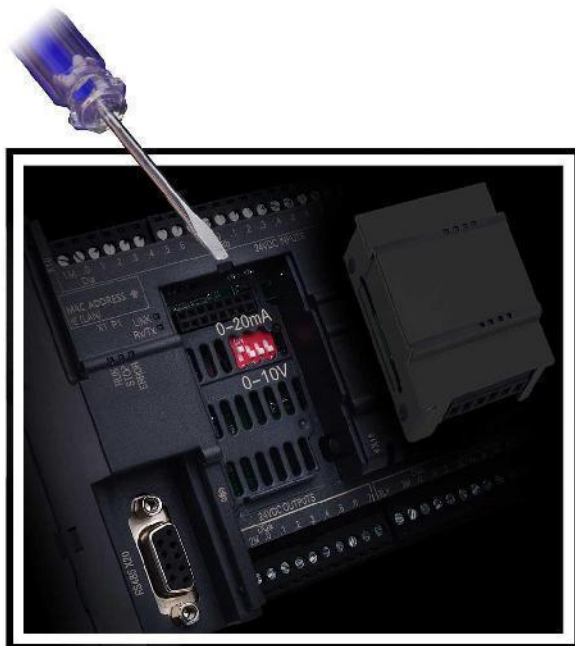
SR20PRO,ST20PRO,CR30XP, SR30XP,ST30XPAnalog input	Terminal Definition	Internal DIP switch settings
	A+: No.1aisle0-10V/0-20mAenter.	
	M: Common terminal for analog input.	
	B+: No.2aisle0-10V/0-20mAenter;	
	C+: No.3aisle0-10V/0-20mAenter.	
	M: Common terminal for analog input. D+: No.4aisle0-10V/0-20mAenter;	
Analog input channel register address:AIW0,AIW2,AIW4,AIW6		
SR20PRO,ST20PRO,CR30XP, SR30XP,ST30XPAnalog output	Terminal Definition	
	Va: No.1aisle0-10VOutput.	
	Ia: No.1aisle0-20mAOutput.	
	Vb: No.2aisle0-10VOutput.	
	Ib: No.2aisle0-20mAOutput.	
	L+Sensor power supply24V+, for export. MSensor power supply24V-It also serves as a common terminal for analog output.	
Analog output channel register address:AQW0,AQW2		

SR40XP,ST40XPAnalog input	Terminal Definition
 0-10V/0-20mA INPUTS	V0: No.1aisle0-10VVoltage input.
	I0: No.1aisle0-20mACurrent input.
	M: Common terminal for analog input.4individualMInternal conduction.
	Note: Other1,2,3Channel definition same0aisle.
Analog input channel register address:AIW0,AIW2,AIW4,AIW6,AIW8,AIW10	
SR40XP,ST40XPAnalog output	Terminal Definition
 0-10V/0-20mA OUTPUTS 24VDC ↓ 传感器电源 对外输出24V	Va: No.1aisle0-10VOutput.
	Ia: No.1aisle0-20mAOutput.
	M: Common terminal for analog output.
	Vb: No.2aisle0-10VOutput.
	Ib: No.2aisle0-20mAOutput.
	L+Sensor power supply24V+, for export.
MSensor power supply24V-, for export.	
Analog output channel register address:AQW0,AQW2	

Note 1: Analog input channels support voltage or current input. , For CR20XP, SR20XP And ST20XP, through Terminal wiring distinction. For SR20PRO and ST30PRO. , CR30XP, SR30XP , ST30XP, via DIP switch

Setup instructions: Remove the signal board slot from the main unit. You will then see the analog input DIP switches. Each switch corresponds to one analog input channel.

Moving the switch up provides 0~20mA, and moving it down provides 0~10V. See the diagram below.



Note: Analog output channel, By wiring terminal, Current output, Voltage output, Subject to the same A/QW Register control.

2.2 Main unit indicator light status

Classification	logo	color	meaning
PLC Running status indicator lights	RUN	green	Constantly lit: Running
	STOP	yellow	Solid: Stopped; Flashing: Forced position is active.
	ERROR	red	Always on: Fault
Network port status indicator lights	LINK	green	Changliang: Connection established successfully
	Rx/Tx	yellow	Blinking: Data is being sent and received.

Indicator light status	Common State Analysis
STOP light (yellow light always on)	① If the program does not run after downloading, click the RUN button in the software; ② If it does not run after power-on, check the system block, start it, and select RUN; ③ If the yellow light is on during operation, open the information table to check for fatal and non-fatal errors; ④ If the software does not run even after clicking the RUN button, check the system blocks, start the program, allow missing hardware, allow hardware configuration errors, check the boxes and try again.
STOP light flashing yellow	① If there are forced points, click "Debug" in the menu bar, then click "Cancel All Forced Points"; ② The SD card was not removed.
Three indicator lights flashing	① If the power supply voltage is below 18V, check the power supply. ② The "Flash Indicator Light" button was clicked on the communication interface.

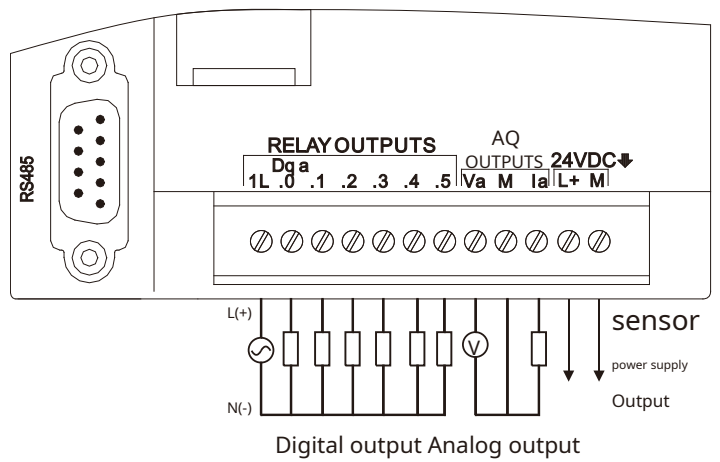
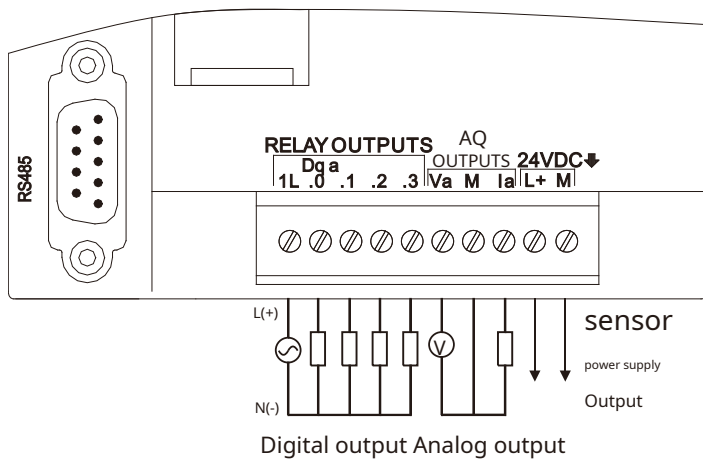
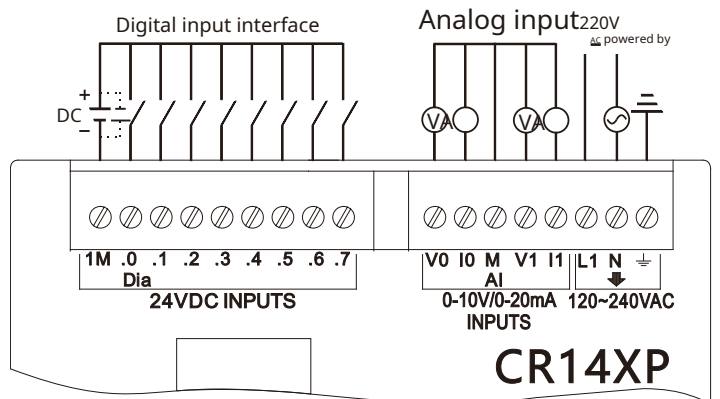
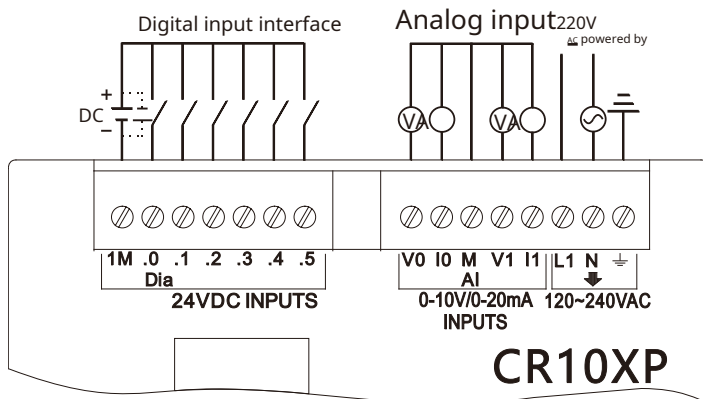
2.3 Host technical parameters

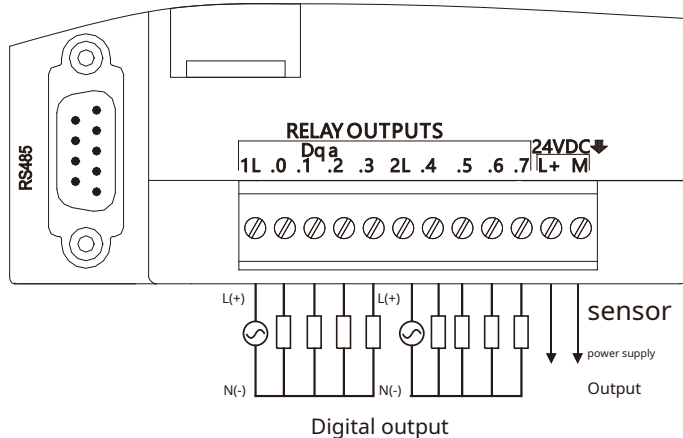
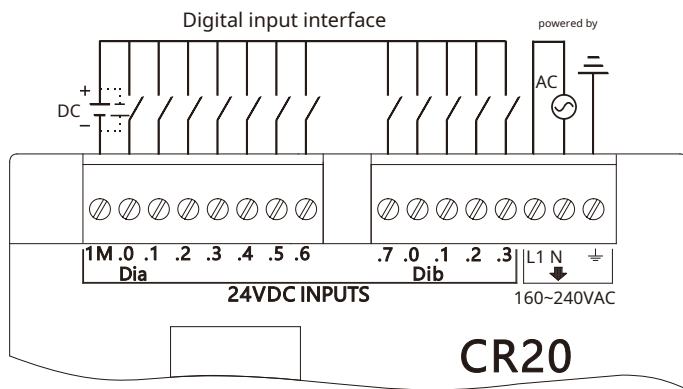
Standard host	SR20/ ST20	SR20XP/ ST20XP	SR20PRO/ ST20PRO	SR30/ ST30	SR30XP/ ST30XP	SR40/ ST40	SR40XP /ST40XP	SR60/ ST60
Configuration selection	SR20/ST20	SR20/ST20	SR20/ST20	SR30/ST30	SR30/ST30	SR40/ST40	SR40/ST40	SR60/ST60
Power consumption	12W/10W	14W/12W	16W/14W	14W/12W	18W/15W	23W/18W	27W/22W	30W/25W
Program space	Maximum size 50KB; compilation warnings can be ignored.							
Data space	12KB			16KB		20KB		24KB
Keep storage area	Maximum 12KB							
Power supply voltage	SR/CR relay type: power supply range 160~260VAC; ST transistor type: power supply range 20~28VDC.							
Process mapping	Zone I ranges from I0.0 to I1279.7; Zone Q ranges from Q0.0 to Q1279.7.							
Analog mapping	56-character AI/56-character AQ							
Dimensions (mm)	90x100x81		110x100x81		125x100x81		175x100x81	
IO digital quantity								
Onboard digital	12 in, 8 out			18 in, 12 out		24 in, 16 out		36 in, 24 out
Input type	Drain/source bipolar; Rated voltage 24VDC, 4mA; Maximum continuous allowable voltage 30VDC							
Logical input	Logic 1: Minimum 16V. Logic 0: Maximum 5V.							
Output format	SR/CR: Relay type, ST: Transistor type							
Output type	Transistor: Source type (can output 24V+ and disconnect 24V+, cannot output 0V); Relay: Dry contact.							
Output current	The transistor can withstand a maximum resistive load of 0.5A (16W) and an inductive load of 0.2A (5W); the relay can withstand a maximum resistive load of 2A and an inductive load of 0.5A.							
Mechanical life	Transistor type has no lifespan limit; relay type has a lifespan of 100,000 cycles.							
High-speed counting	Single-phase: 4 channels 100kHz; 2 channels 30kHz			Single-phase: 5 channels 100kHz; 1 channel 30kHz				
	Phase A/B: 2 channels 100kHz; 2 channels 30kHz			Phase A/B: 3 channels 100kHz; 1 channel 30kHz				
	I0.0~I0.3 are 100kHz high-speed ports, the rest are low-speed ports.			I0.0~I0.3 and I0.6, I0.7 are 100kHz high-speed ports, the rest are low-speed ports.				
Pulse output	2-channel (transistor only): Maximum 100kHz			3-channel (transistor only): Maximum 100kHz				
IO analog input								
Onboard analog quantity	—	2 in, 1 out	4 In, 2 Out	—	4 In, 2 Out	—	6 in, 2 out	—
Input method	Non-difference							
Input signal	0~10V or 0~20mA							
Input data format	0~27648							
impedance	Voltage: 30KΩ, Current: 150Ω							
Input resolution	12-bit							
Input error	Maximum: ±1% of full scale							
Input conversion time	100ms							
Output signal	0~10V and 0~20mA							
Output data format	The input voltage range is 0~27648, with a maximum assignable value of 28200, corresponding to 20.4mA and 10.2V.							
Output load capacity	Voltage: >5KΩ, Current: <500Ω							
Interfaces and functions								
Network port specifications	One 10M/100M adaptive port, supporting S.7 Ethernet protocol; Modbus TCP protocol; TCP freeport protocol;							
Number of network ports	It supports a maximum of 6 connections, and all protocol connections share these 6 connections.							
485 interface	It comes with 1 built-in port, supporting PPI protocol, Modbus RTU protocol, and 485 freeport protocol; it supports baud rates of 9.6K, 19.2k and 187.5kbps; by adding signal boards SB CM01 or SB CM02, another 485 or 232 interface can be added, which also supports the above protocols.							

Extended Module	The CR series does not support expansion modules; the SR/T series supports the Gongbei Smart standard expansion modules. A maximum of 12 modules are supported; refer to the expansion module usage section.
signal board	Supports all series of Gongbei signal boards.
memory card	Supports microSDHC cards (sold separately)
Real-time clock	Built-in, replaceable, button battery, non-rechargeable; device retains power for approximately 1 year after power failure; device does not consume battery power when powered on; battery failure clock resets to 2000.01.01.
encryption	It supports Level 4 encryption, using more complex encryption algorithms and storage depth, making it unbreakable and more secure.
bottom right sensor	When the main unit has 6 expansion modules: maximum output power is 10W. When the main unit has 12
Output power	expansion modules: output power is 0W (i.e., no additional output is possible).
Operating temperature	- 20°C~50°C

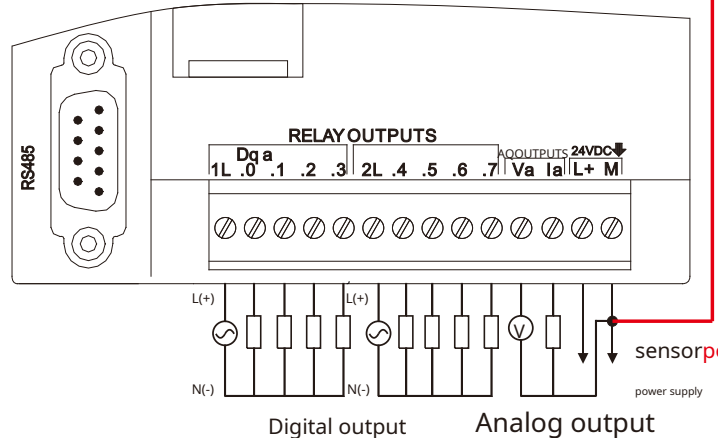
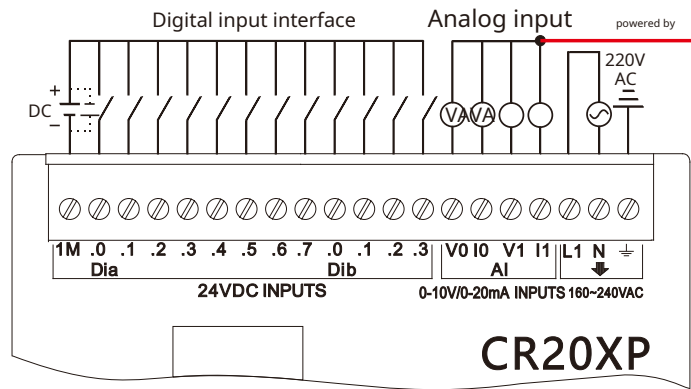
Compact Mainframe	CR10XP	CR14XP	CR20	CR20XP	CR30	CR30XP	CR40	CR60
Configuration selection	SR20				SR30		SR40	SR60
Power consumption	10W	11W	12W	14W	14W	18W	23W	30W
Program space	Maximum size 50KB; compilation warnings can be ignored.							
Data space	12KB				16KB		20KB	24KB
Keep storage area	Maximum 12KB							
Power supply voltage	SR/CR relay type power supply range 160~260VAC							
Process mapping	Zone I ranges from I0.0 to I1279.7; Zone Q ranges from Q0.0 to Q1279.7.							
Analog mapping	56-character AI/56-character AQ							
Dimensions (mm)	90x100x81				110x100x81	125x100x81		175x100x81
IO digital quantity								
Onboard digital	6 in, 4 out	8 in, 6 out	12 in, 8 out		18 in, 12 out		24 in, 16 out	36 in, 24 out
Input type	Drain/source bipolar; Rated voltage 24VDC, 4mA; Maximum continuous allowable voltage 30VDC							
Logical input	Logic 1: Minimum 16V. Logic 0: Maximum 5V.							
Output format	CR: Relay type							
Output type	Relay: Dry contacts.							
Output current	The relay can handle a maximum of 2A with a resistive load and 0.5A with an inductive load.							
Mechanical life	Relay type opening and closing 100,000 times							
High-speed counting	Single-phase 4-channel	Single-phase 5-channel	Single-phase 4-channel 100kHz; 2 lines 30KH Z		Single-phase 5 channels 100kHz; 1 channel 30kHz;			
	30K; A/B phase	30K; A/B phase	Phase A/B: 2 channels 100kHz; 2 channels		A/B phase 3 channels 100kHz; 1 channel 30kHz			
	Route 2, 30K	3rd Route 30K	30kHz					
	low speed port	low speed port	I0.0~I0.3 is 100kHz high speed.		I0.0~I0.3 and I0.6, I0.7 are 100kHz high-speed ports, the rest are low-speed ports.			
			Mouth, the rest of the low-speed mouth					
IO analog input								
Onboard analog quantity	2 in, 1 out	2 in, 1 out	—	2 in, 1 out	—	4 In, 2 Out	—	—
Other parameters	Same as standard host parameters							
Interfaces and functions								
Extended Module	The CR compact mainframe does not support expansion modules.							
Other parameters	Same as standard host parameters							

2.4Main unit wiring diagram

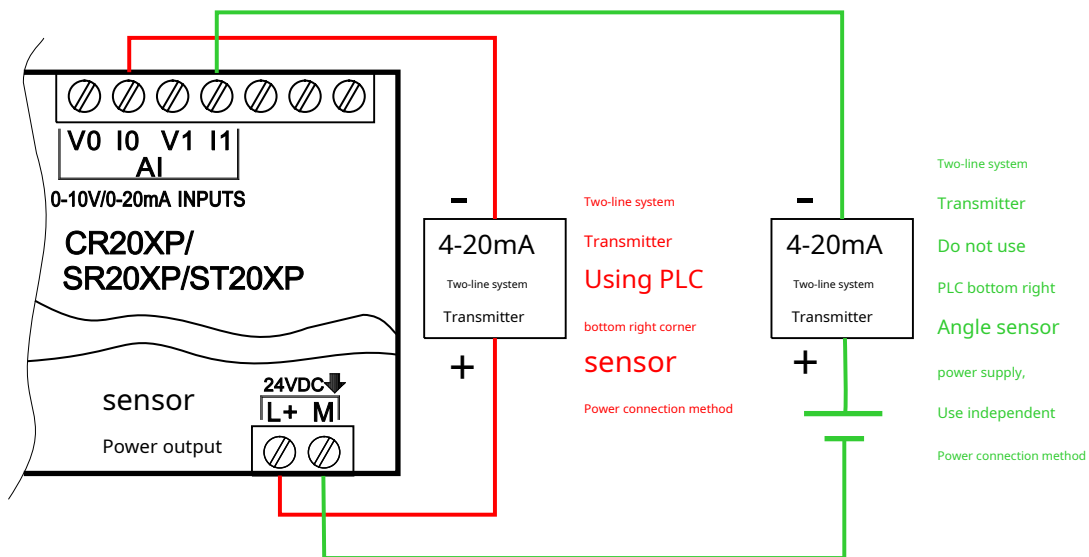




CR20 (Relay) Wiring Diagram

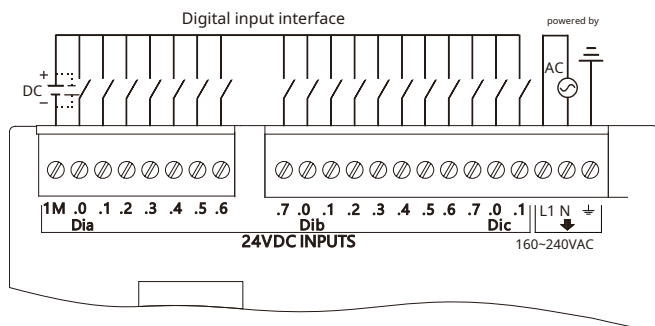


CR20XP (Relay) Wiring Diagram

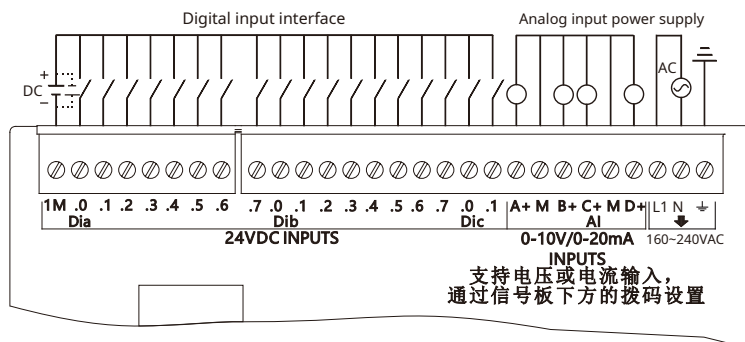


CR20XP/SR20XP/ST20XP Transmitter Connection Method

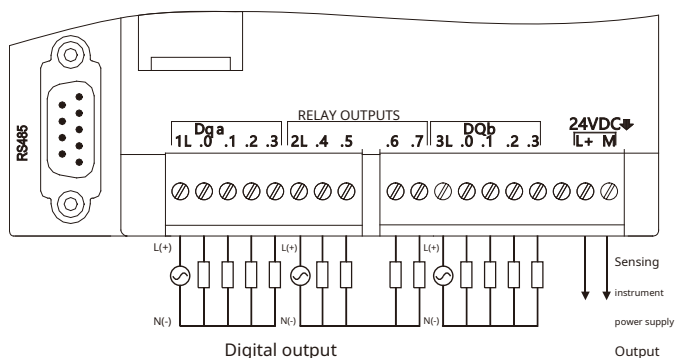
mold
Proposed
quantity
lose
enter
male
common
end
make
use
right
Down
horn
pass
feel
instrument
electricity
source
burden



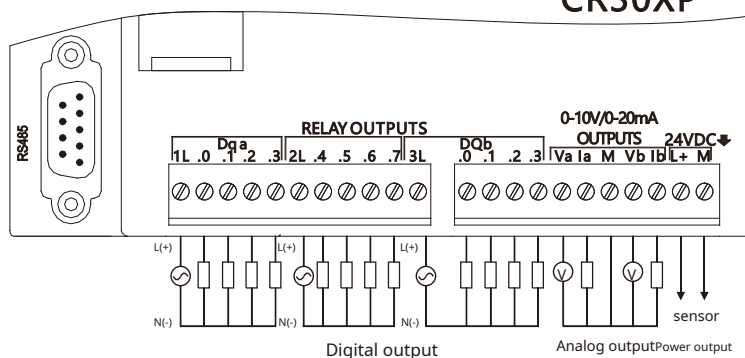
CR30



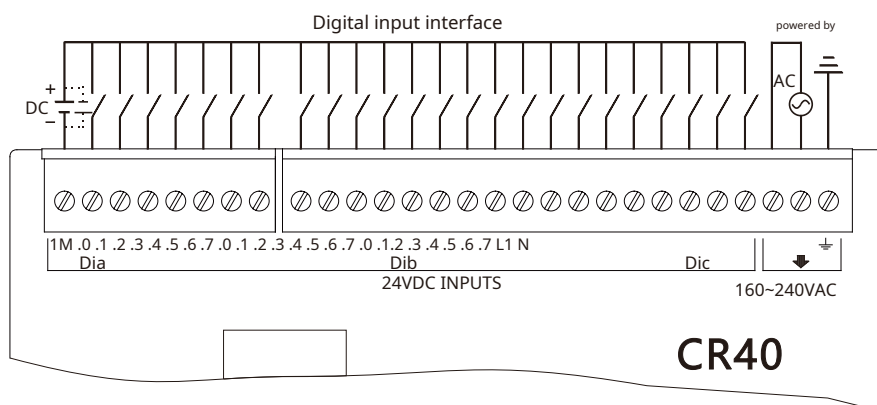
CR30XP



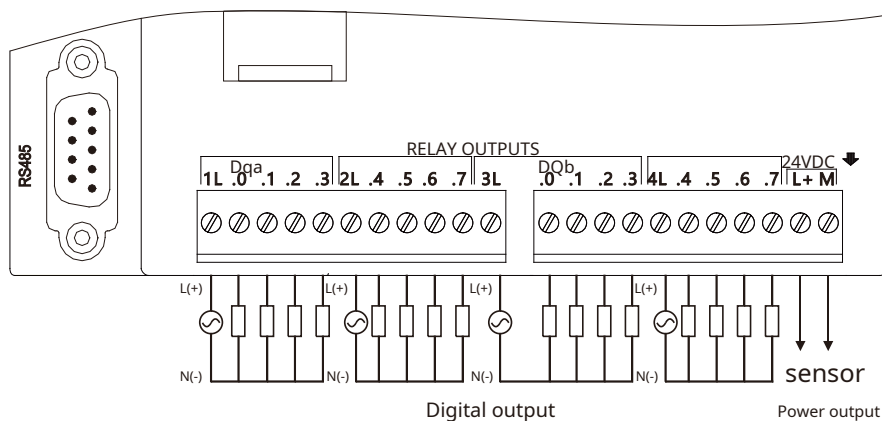
CR30 (Relay) Wiring Diagram



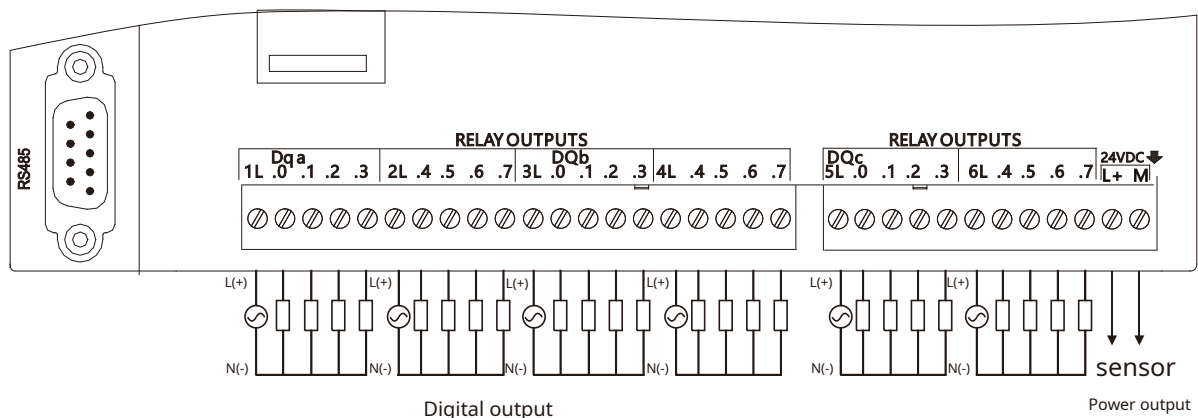
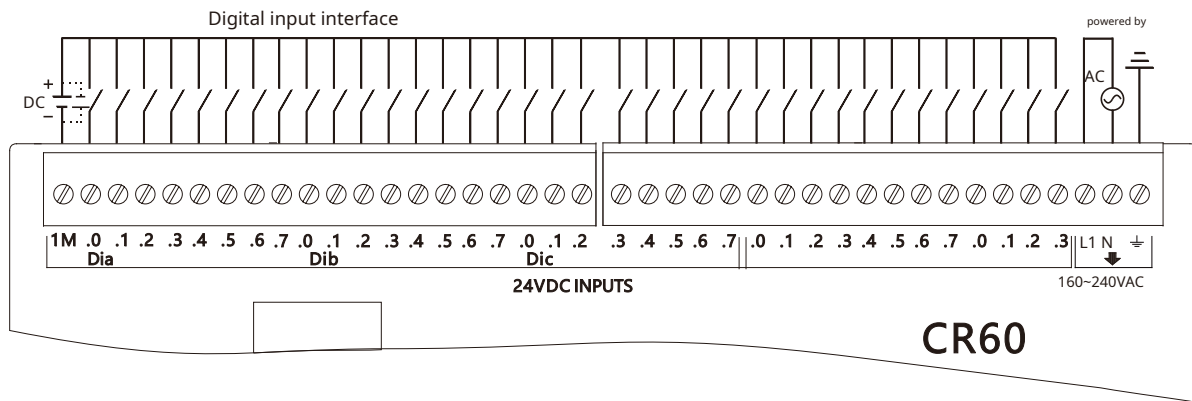
CR30XP (Relay) Wiring Diagram



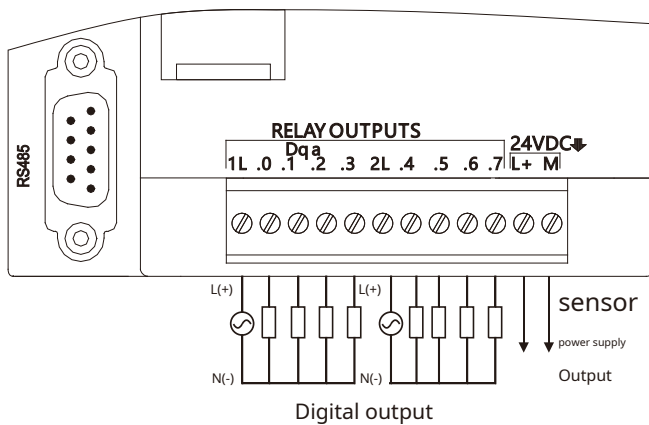
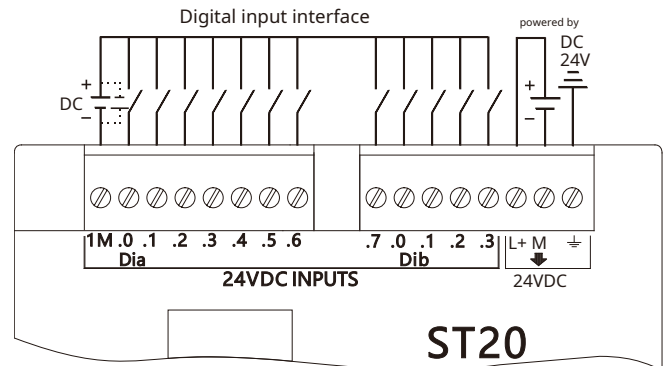
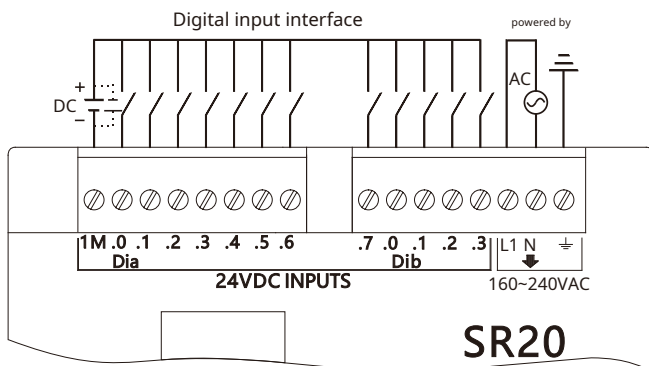
CR40



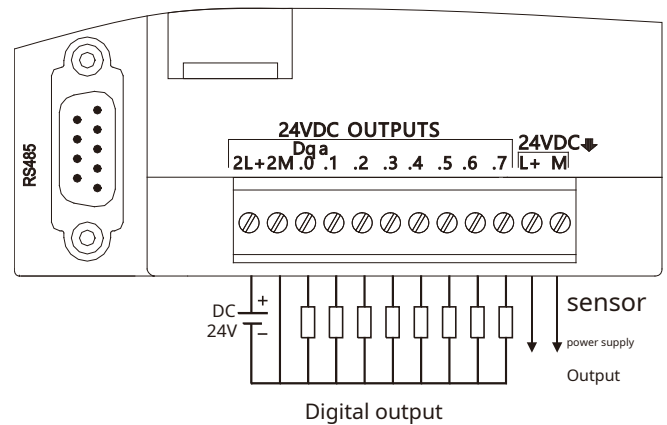
CR40 (Relay) Wiring Diagram



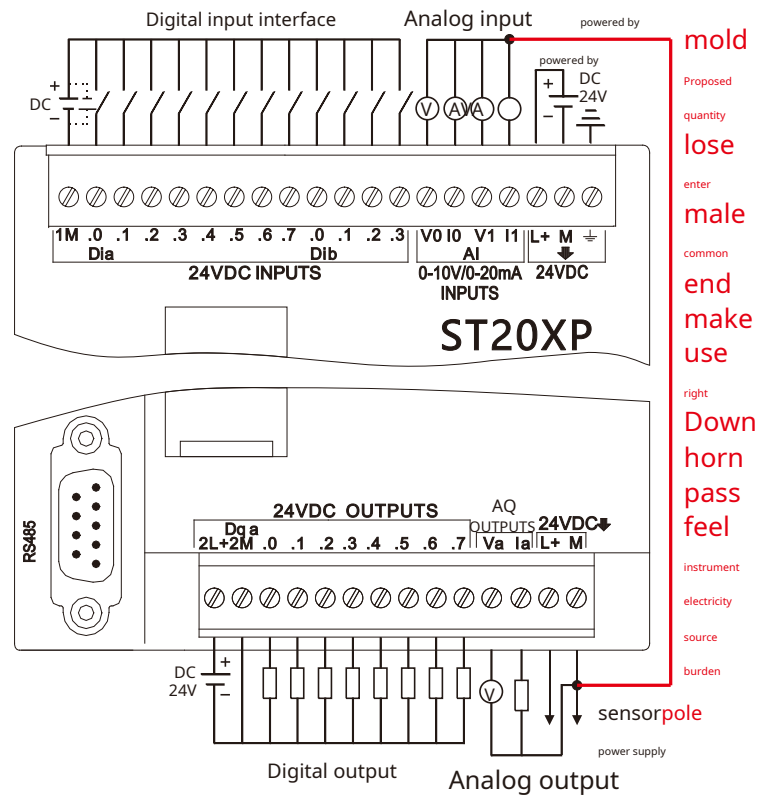
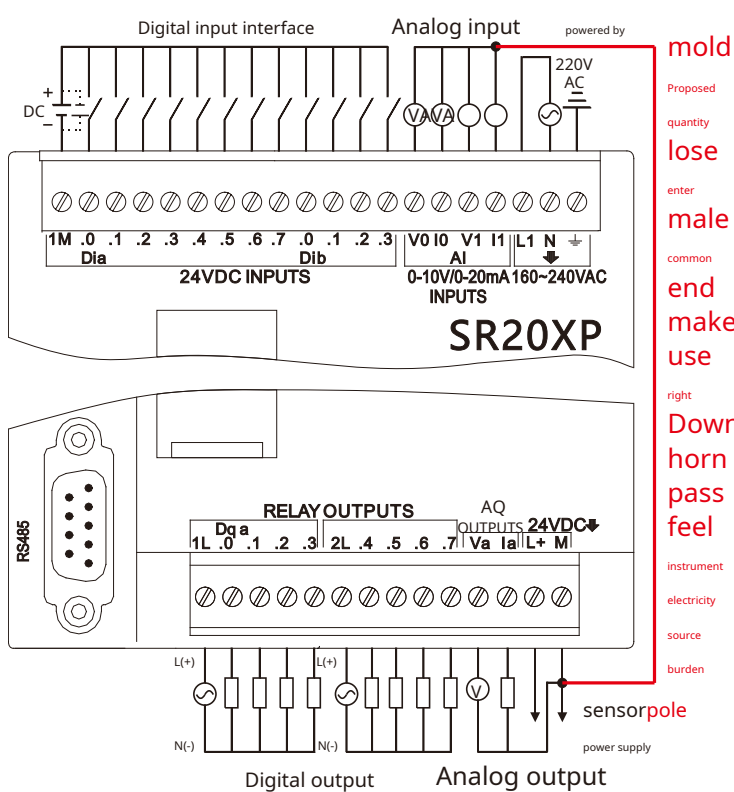
CR60 (Relay) Wiring Diagram



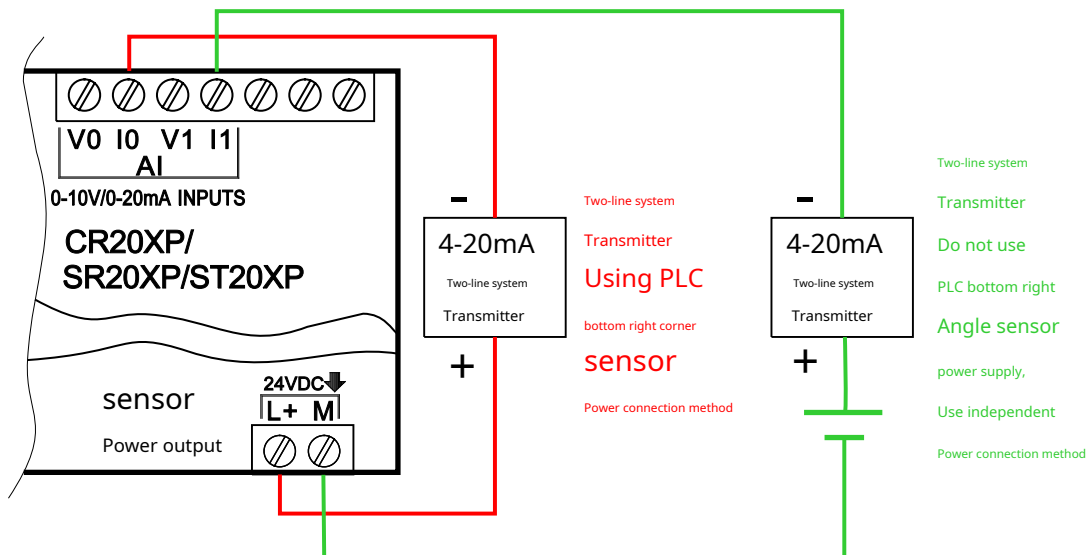
SR20 (Relay) Wiring Diagram



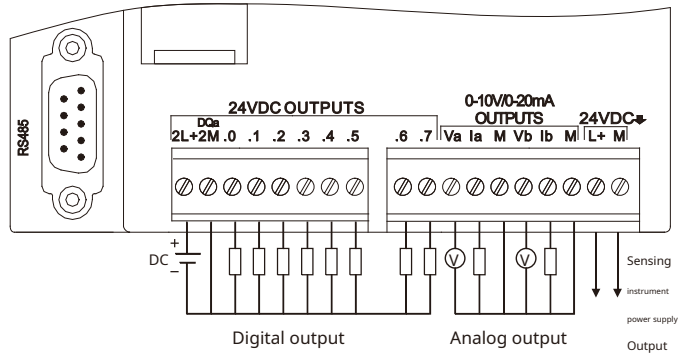
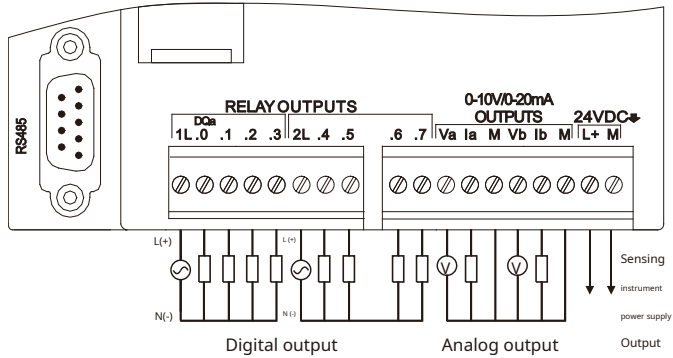
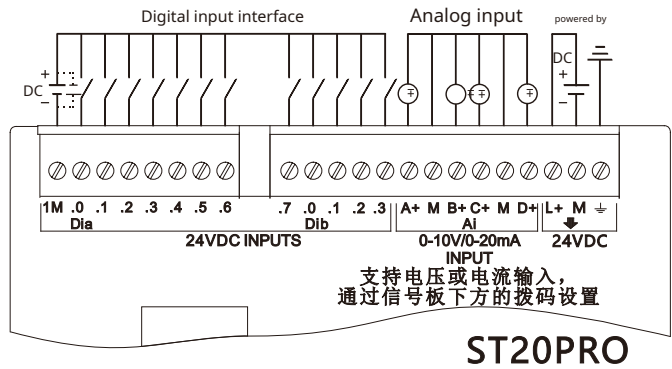
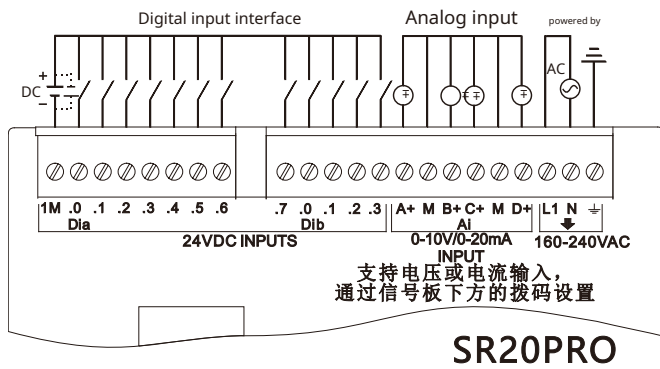
ST20 (Transistor) Wiring Diagram



SR20XP (Relay, with 2 inputs and 1 output analog signal - refer to section 2.1 for usage) ST20XP (Transistor, with 2 inputs and 1 output analog signal - refer to section 2.1 for usage)

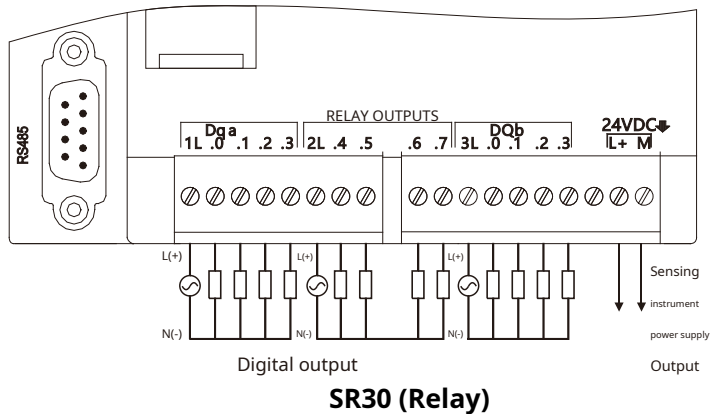
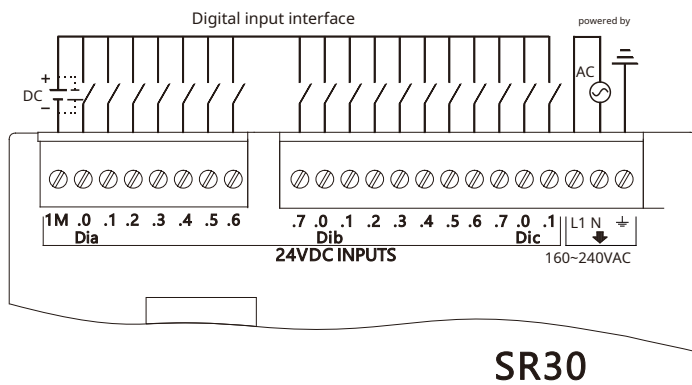


CR20XP/SR20XP/ST20XP Transmitter Connection Method

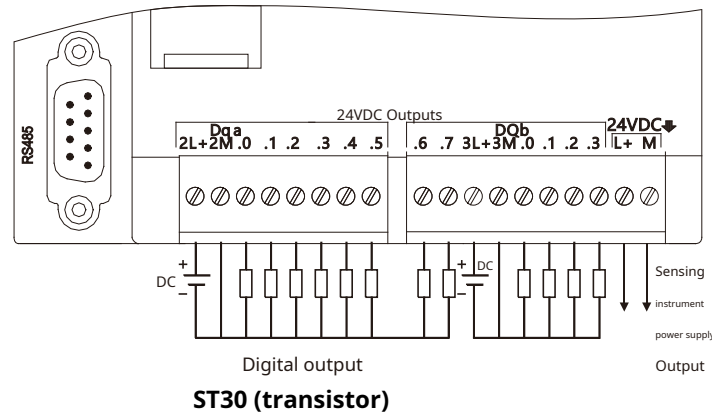
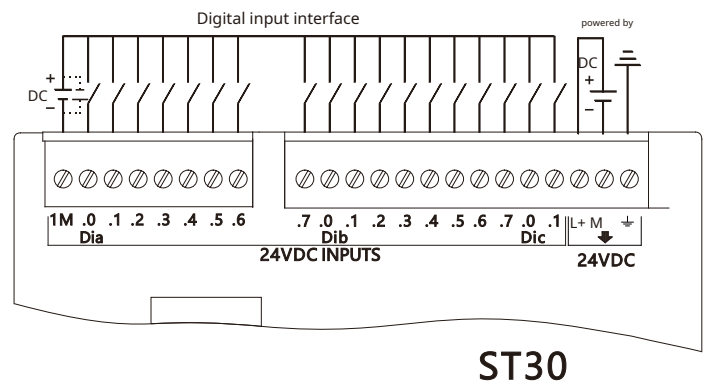


SR20PRO (Relay, with 4 inputs and 2 outputs analog inputs - refer to section 2.1 for usage instructions)

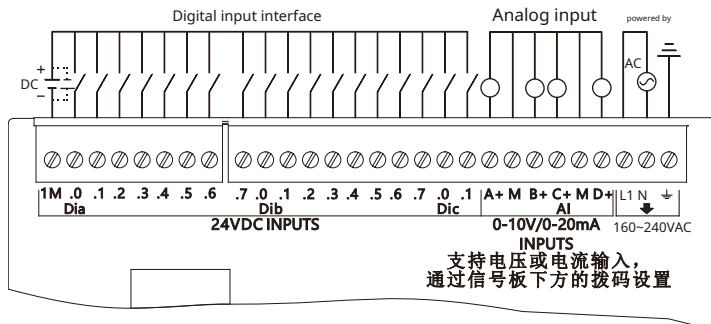
ST20PRO (Transistor, with 4 inputs and 2 outputs for analog input - use reference section 2.1)



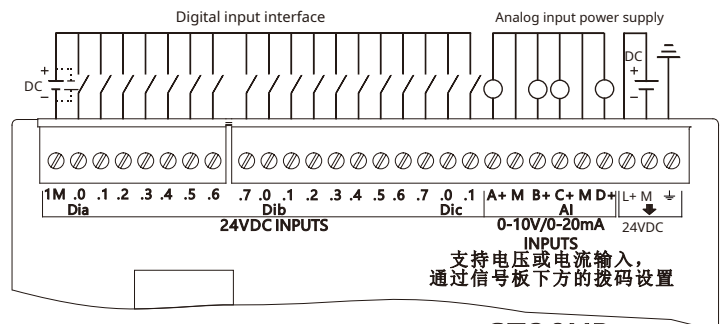
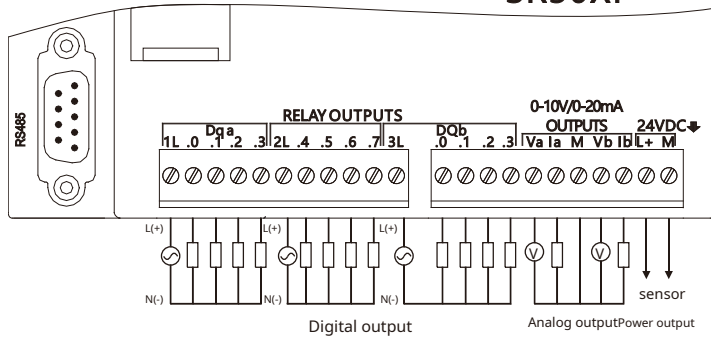
SR30 (Relay)



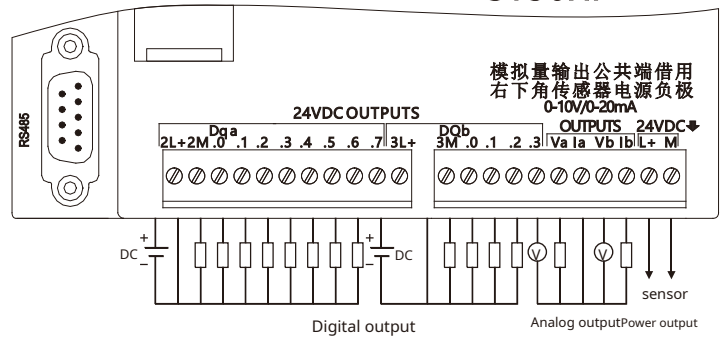
ST30 (transistor)



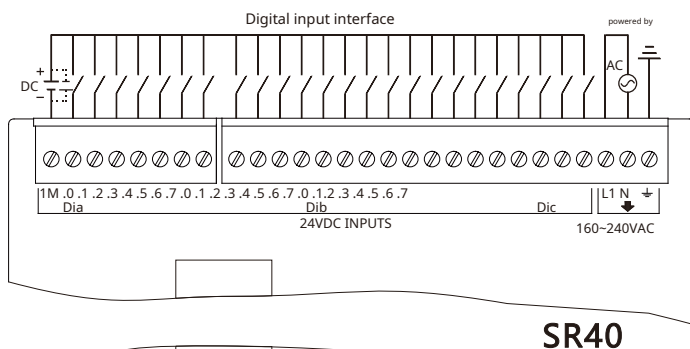
SR30XP



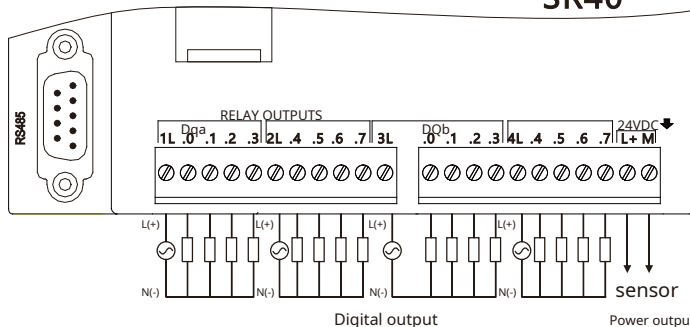
ST30XP



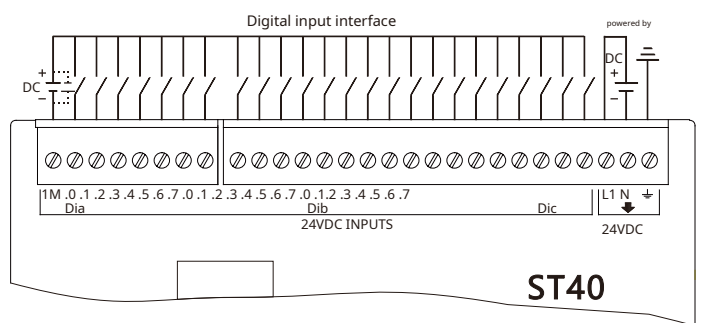
SR30XP (Relay, with 4 inputs and 2 outputs for analog input - refer to section 2.1 for usage) ST30XP (Transistor, with 4 inputs and 2 outputs for analog input - refer to section 2.1 for usage)



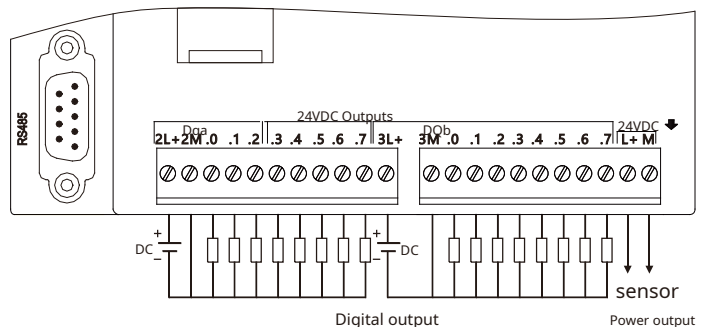
SR40



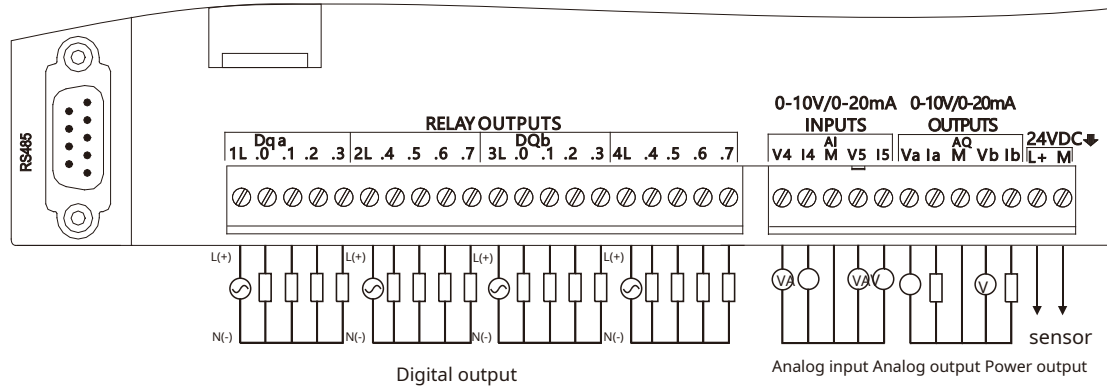
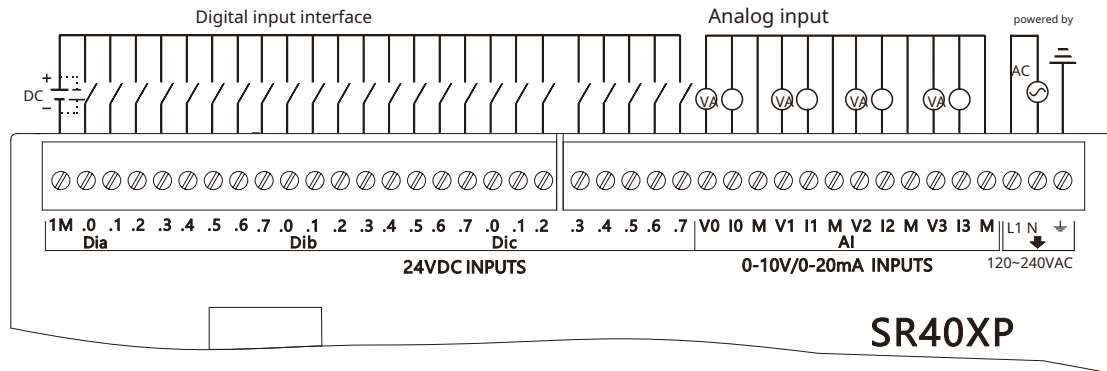
SR40 (Relay)



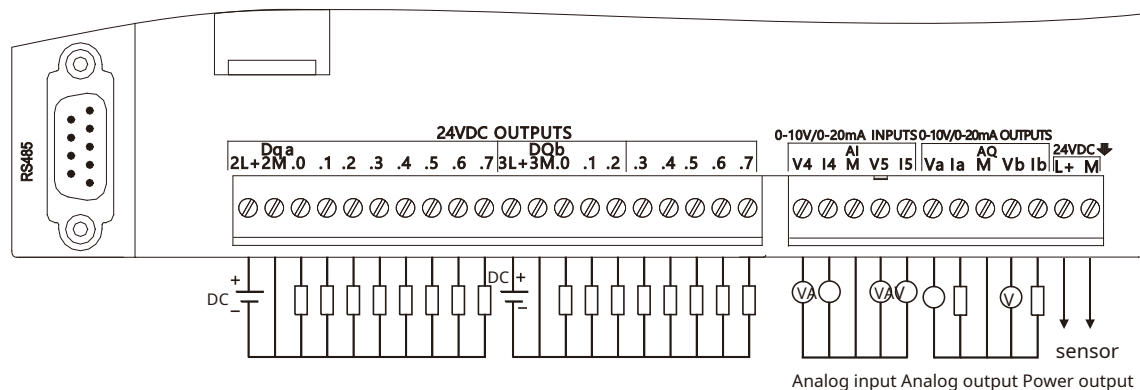
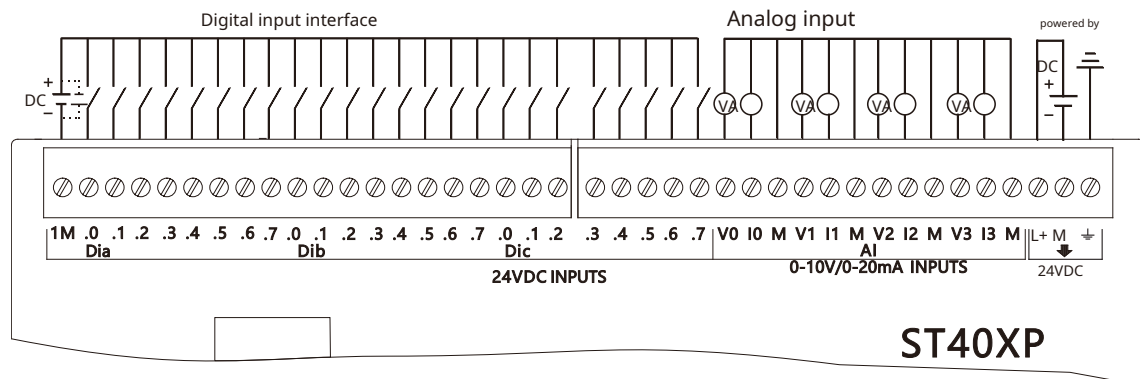
ST40



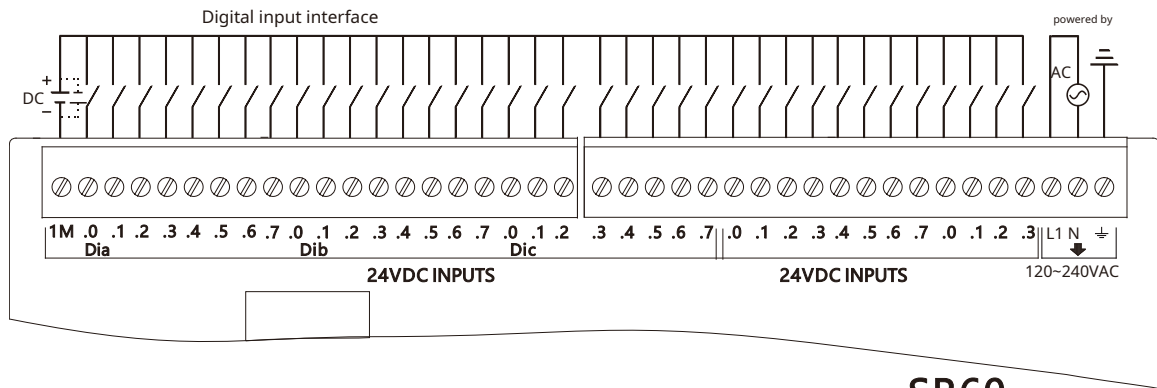
ST40 (transistor)



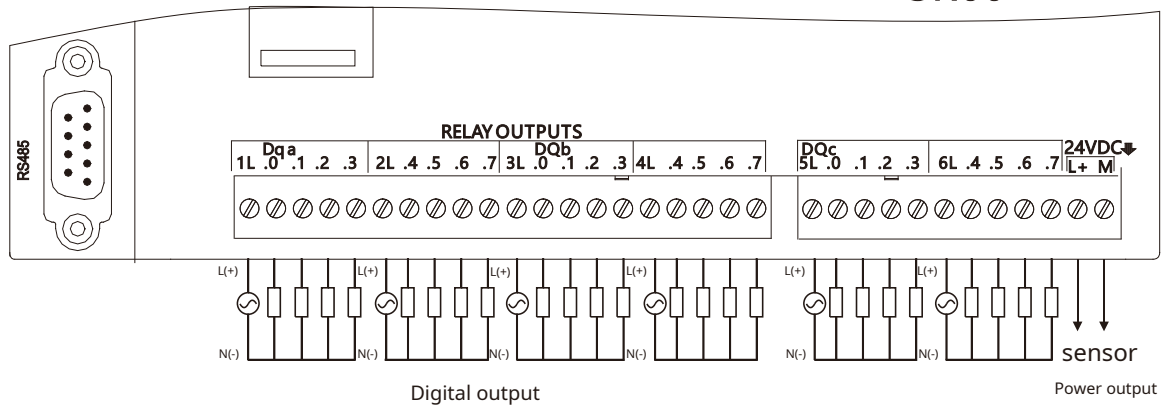
SR40XP (Relay, with 6 inputs and 2 outputs analog signal - refer to section 2.1 for usage)



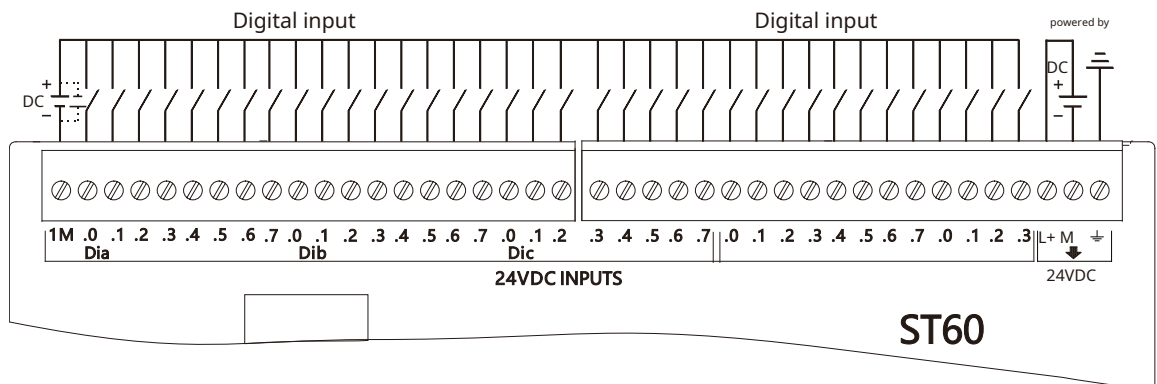
ST40XP (Transistor, with 6 inputs and 2 outputs for analog input - use reference section 2.1)



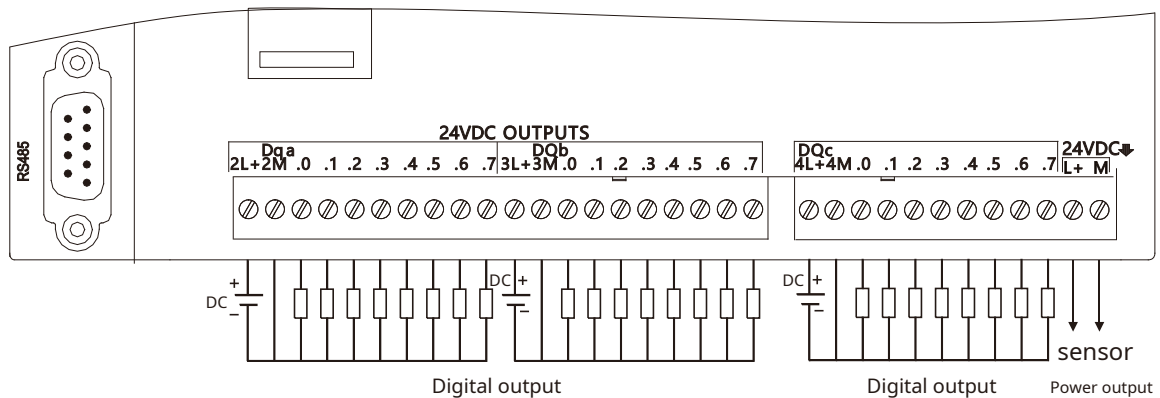
SR60



SR60 (Relay)



ST60



ST60 (transistor)

2.5Frequently Asked Questions

2.5.1 Does Smart support data retention after power failure? How long is the data retained? What is the data retention range? A: Yes, permanent storage is supported. The maximum storage size is 10240 (10KB) bytes. An error will occur if the configured value exceeds the range.

2.5.2 How long can the Smart Real-Time Clock remain on standby? A: It is powered by a built-in battery and can last for more than a year on standby. The battery can be replaced when it runs out of power.

2.5.3 Is the STOP indicator light on the Smart host flashing? A: 1. There might be a forced activation; try disabling all forced activations. 2. Check if the SD card is inserted.

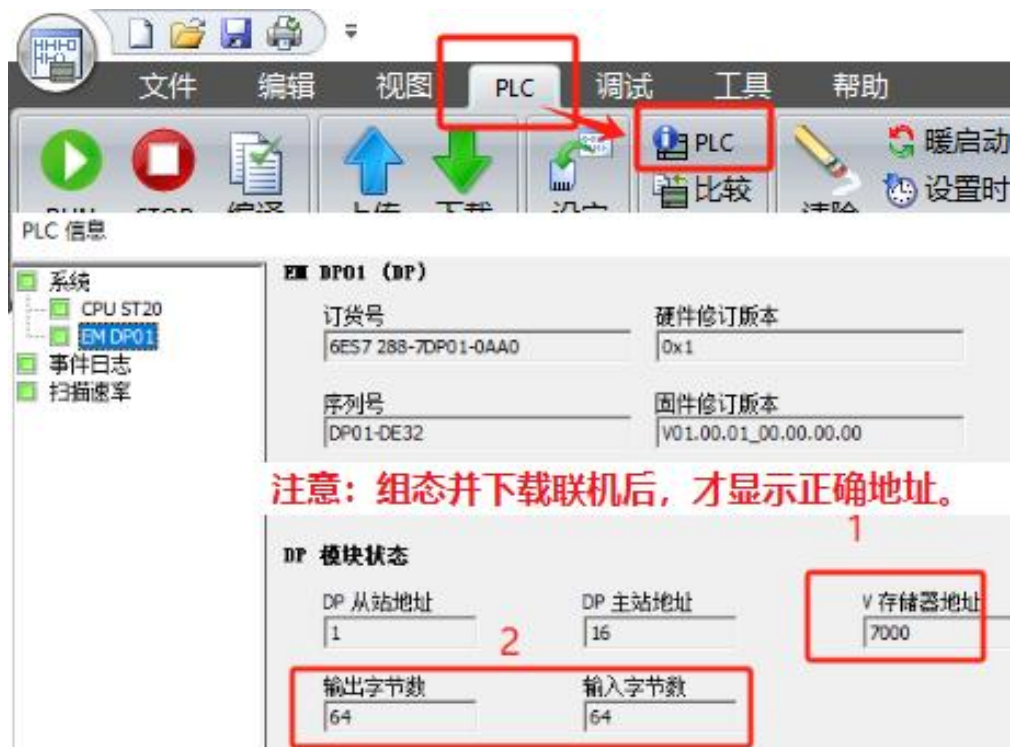
3.Extension module usage

Note: GongbeiCRThis series of main units does not support the right-side expansion module. Gongbei offers a wider variety of expansion module models, such as...EM AE32(32This type of module (analog input module) is called a large-point module and only needs to be configured as follows:EM DP01It's ready to use right away and very simple.

model	type	Configuration selection	model	Module type	Configuration selection	model	Module type	Configuration selection
EM DE08	Standard Module	EM DE08	EM AE04	Standard Module	EM AE04	EM AR02	Standard Module	EM AR02
EM DE16	Standard Module	EM DE16	EM AE08	Standard Module	EM AE08	EM AR04	Standard Module	EM AR04
EM DE32	Large Points Module	EM DP01	EM AE16	Large Points Module	EM DP01	EM AR08	Standard Module	EM AE08
EM DR08	Standard Module	EM DR08	EM AE32	Large Points Module	EM DP01	EM AN04	Standard Module	EM AE04
EM QR16	Standard Module	EM QR16	EM AQ02	Standard Module	EM AQ02	EM AN08	Standard Module	EM AE08
EM QR32	Large Points Module	EM DP01	EM AQ04	Standard Module	EM AQ04	EM AN16	Large Points Module	EM DP01
EM DT08	Standard Module	EM DT08	EM AQ08	Large Points Module	EM DP01	EM AT04	Standard Module	EM AT04
EM QT16	Standard Module	EM QT16	EM AM03	Standard Module	EM AM03	EM AT08	Standard Module	EM AE08
EM QT32	Large Points Module	EM DP01	EM AM06	Standard Module	EM AM06	EM EN88	Large Points Module	EM DP01
EM DR16	Standard Module	EM DR16	EM AM12	Large Points Module	EM DP01	EM EN4C	Large Points Module	EM DP01
EM DR32	Standard Module	EM DR32	EM AM16	Large Points Module	EM DP01	EM AW01	Large Points Module	EM DP01
EM DT16	Standard Module	EM DT16				EM AW02	Large Points Module	EM DP01
EM DT32	Standard Module	EM DT32				EM AW04	Large Points Module	EM DP01

3.1Large Points Expansion Module

Gongbei Big Points module resource mapping toVThe starting address of the zone is automatically assigned. (Attached to the front)6Configuration for each slotEM DP01The starting address can be found atPLCInformation form (menu bar click)PLCToolbar ClickPLCView it in (). See the following image as an example.



The above is marked 1. This is the starting address of the module's resources. (See the diagram above.) 2. This section specifies the number of bytes used for input and output resources, and... **The input resources are specified in order of output resources.** Therefore, input resource usage 64 bytes (VB7000~VB7063) Output resources consumed 64 bytes (VB7064~VB7127).

Assuming the above diagram is EM QT32 (32 The output channel addresses of the transistor output module are as follows: V7064.0, V7064.1.....V7067.7. In the program V7064.0 Assignment 1, but EM QT32 First transistor output.

Assuming the above diagram is EM AM12 (8 Enter 4 The analog input module has the following addresses in sequence: VW7000, VW7002.....VW7014 The output channel addresses are as follows: VW7064.....VW7070 The program contains... VW7064 Assignment 1 3824 Then the first analog output is half the range. 5V and 10mA Use a signal generator to... EM AM12 Second analog input 20mA Read register VW7002 for 27648.

Note: The Gongbei host can be expanded to a maximum extent. **12 Both standard modules and high-point modules are acceptable.** Standard module slot

Set greater than the first 6 For single-slot usage, please refer to the next chapter. The starting address of the large-point module is fixed regardless of the slot, as shown in the table below.

slot Number	V-zone memory Starting address	Digital input/output module		Analog quantity, temperature, or weighing module	
		Input channel start address	Output channel start address	Input channel start address	Output channel start address
EM0	VB7000	V7000.0	V7064.0	VW7000	VW7064
EM1	VB7128	V7128.0	V7192.0	VW7128	VW7192
EM2	VB7256	V7256.0	V7320.0	VW7256	VW7320
EM3	VB7384	V7384.0	V7448.0	VW7384	VW7448
EM4	VB7512	V7512.0	V7576.0	VW7512	VW7576
EM5	VB7640	V7640.0	V7704.0	VW7640	VW7704
EM6	VB7768	V7768.0	V7832.0	VW7768	VW7832

EM7	VB7896	V7896.0	V7960.0	VW7896	VW7960
EM8	VB8024	V8024.0	V8088.0	VW8024	VW8088
EM9	VB8152	V8152.0	V8216.0	VW8152	VW8216
EM10	VB8280	V8280.0	V8344.0	VW8280	VW8344
EM11	VB8408	V8408.0	V8472.0	VW8408	VW8472

As shown in the table above, each large-point module occupies 128 bytes of the V area, and its address is fixed according to its slot number. For example, if EM0 is a regular module and slot EM1 is a large-point module, then the large-point module does not start from VB7000, but from VB7128, as shown in the figure below.

PLC 信息

系统

- CPU ST20
- EM AQ02
- EM DP01
- 事件日志
- 扫描速率

EM DP01 (DP)

订货号: 6ES7 288-7DP01-0AA0

硬件修订版本: 0x1

序列号: DP01-DE32

固件修订版本: V01.00.01_00.00.00.00

错误

当前 I/O 错误: 无报警

DP 模块状态

DP 从站地址: 2

DP 主站地址: 16

V 存储器地址: 7128

输出字节数: 64

输入字节数: 64

状态: 当前处于数据交换模式

For example: SR20 + EM DE08 + EM EN88 + EM AM06 + EM DE32, a total of 4 extensions. EM EN88 is the EM1 slot number, occupying 128 bytes starting from VB7128. The analog input channels are VW7128, VW7130.....VW7142 in sequence, and the temperature input channels are VW7144, VW7146.....VW7158 in sequence. EM DE32 is the EM3 slot number, occupying the first 128 bytes of VB7384. The digital input channels are V7384.0, V7384.1...V7387.7 sequentially.

illustrate 1: The starting address of the large point module is automatically assigned and cannot be modified. The starting address can be found in the table above. Slot number in front 6 You can also quickly view the information table at any time.

illustrate 2: For modules with large point counts V District Address , It cannot be used for any other purpose in the program, Unoccupied ones can be used freely Convenient to use.

3.2Standard extension module

When standard modules are connected to the first 6 slots, they can be configured directly in the status table, just like before. Channel type configuration and filter configuration are supported, and will not be elaborated further in this document. (Note: EM AN04 is configured for use with EM AE04; EM AR08, EM AT08, and EM AN08 are configured for use with EM AE08, and are used according to the addresses in the system block.)

Note: The Gongbei host can be expanded to a maximum extent. 12 Both standard modules and high-point modules are acceptable. Large-point digital model

Block position greater than the first6When there are 6 slots, refer to the previous chapter. When the standard module location is greater than 6 slots, the resource addresses are arranged compactly according to the table below.

Special registers		Digital input channel		Digital output channel	
IW630	Reserved	First passage	I700.0	First passage	Q700.0
IW632	Diagnostic alarm codes	Second passage	I700.1	Second passage	Q700.1
IB634	Diagnostic alarm device ID	...		...	
IB635	Disconnection error device ID	Channel 256	I731.7	Channel 256	Q731.7
ID636	Module 7 (Data Type) (ASCII type)				
ID640	Module 8 Model	Analog input or temperature channel		Analog output channel	
ID644	Module 9	First passage	IW800	First passage	QW800
ID648	Module 10	Second passage	IW802	Second passage	QW802
ID652	Module 11 Model	...		...	
ID656	Module 12 Model	Channel 128	IW1054	Channel 128	QW1054

Note 1: I, Q How big is the district? I Largest district IB1279, QB1279.

Note 2: For a partial explanation of special registers, please see the FAQ section at the end of this document.

Note 3: For slots 6 Future expansion modules, Maximum number of points for digital input 256; Digital output 256_{point}; mold

Analogous Input 128Point; analog output 128 Points; because large point modules do not occupy space. I, Q The district is not considered.

Limitations of the points module.

For example: The GMB SR20 + 6 modules + EM DE08 (8 digital inputs) + EM AE16 (16 analog inputs) + EM AM06 (4 analog inputs, 2 analog outputs) + EM DR16 (8 digital inputs, 8 analog outputs) + EM AQ02 (2 analog outputs) totals 11 modules. The starting addresses of the first 6 modules are obtained from the configuration table and will not be elaborated further.

The digital input channel addresses of EM DE08 are I700.0, I700.1, ..., I700.7, respectively; EM AM16 is a large-point module that does not occupy the I and Q areas, and its starting address is fixed at VW7896; the analog input channel addresses of EM AM06 are IW800, IW802, ..., IW806, respectively.

The analog output channel addresses are QW800 and QW802, respectively.

The digital input channel addresses of the EM DR16 are I701.0, I701.1, ..., I701.7, respectively.

The digital output channel addresses are Q700.0, Q700.1, ..., Q700.7, respectively.

The analog output channel addresses of EM AQ02 are QW804 and QW806, respectively.

Note 1: When the standard module is installed after the 6th slot, the Channel configuration cannot be performed at the system block level, therefore analog signals...

input/output modules can only use the default channel settings. , The default is either a current input channel or a current output channel. Therefore...

For modules requiring voltage input or output, they should be placed in the front. 6 Each slot. However, for wiring, channels are distinguished.

Modules of this type are unaffected, such as EM AE16 All channels support voltage or current wiring differentiation, so...

In the slot 6 It will not be affected in the future.

3.3 Expansion Module Technical Specifications

Digital input/output module	EM DE08/16/32	EM DR08/ QR16/QR32	EM DT08/ QT16/QT32	EM DR16/DR32	EM DT16/DT32
Configuration model	EM DE08/16/ DP01	EM DR08/ QR16/ DP01	EM DT08/ QT16/ DP01	EM DR16/DR32	EM DT16/DT32
Number of channels	Entered on 8/16/32	8/16/32 Relay output	8/16/32 Transistor output	8 in, 8 out / 16 in, 16 out Output relay	8 in 8 out / 16 in 16 Transistor output
Digital input type	Sink or source input (supports bidirectional input; common terminal can be positive or negative).				
Digital input voltage	Logic 1 Minimum voltage: 15VDC at 2.5mA				
	Logic 0 Maximum voltage: 5VDC at 1mA				
Digital input isolation	Internal opto-isolation				
Maximum output current	The transistor can withstand a maximum resistive load of 0.5A (16W) and an inductive load of 0.2A (5W).				
	The relay can handle a maximum of 2A with a resistive load and 0.5A with an inductive load.				
Output common terminal	Transistor 3A				
Rated current	8A relay				
Digital output isolation	Internal opto-isolation				
L+,M Rated Voltage	24 V DC at 4 mA (30 V DC maximum)				
DIAG indicator light	A solid green light indicates that the module has been configured and there are no errors.				
	Green light flashing: Module is not configured.				
	Red flashing: Communication with the host is abnormal (disconnect the module and check if the connector pins are deformed or dented).				
I/O channel indicator lights	A solid green light indicates that there is a signal input/output.				
	Extinguished: No signal input/output.				
Operating temperature	- 20°C~50°C				
Dimensions (width * height * depth)	32-point modules (e.g., EM DE32/QR32/QT32/DR32/DT32): 70×100×81; other modules: 45×100×81;				

Analog module	EM AE04/08	EM AQ02/04	EM AM03/06	EM AE16/32	EM AQ08	EM AM12/16
Configuration model	EM AE04/08	EM AQ02/04	EM AM03/06	EM DP01	EM DP01	EM DP01
Input number	Route 4/8	-	Route 2/4	Route 16/32	-	Route 8/8
Number of output channels	-	Route 2/4	Route 1/2	-	Route 8	Route 4/8
Input range	- 10V~10V or 0-20mA			0~10V or 0-20mA		
Input precision	0.3% of full scale					
Output range	- 10V~10V and 0-20mA			0~10V and 0-20mA		
Output resolution	Voltage: 11 bits + sign; Current: 11 bits					
Output impedance	Voltage: ≥1000Ω Current: ≤300Ω					
Full scale range	Voltage: -27648 to 27648; Current: 0 to 27648; Greater than 29200 Overrange			Voltage/Current: 0 to 27648; Over-range > 29200		
isolation	none					
DIAG indicator light	A solid green light indicates that the module has been configured and there are no errors.			A solid green light indicates that the module has been configured and there are no errors.		
	Green light flashing: Module is not configured.			Green light flashing: Module is not configured.		
	Red flashing: Module power supply malfunction, input channel overload, or output error.			Flashing red: Module power supply malfunction or analog input channel over-range.		

	The channel is faulty or there is a communication problem with the host.	Or there may be a communication problem with the host (disconnect the module and check if the connector pins are deformed or dented).
Channel indicator lights	Extinguished: The module is not configured. A solid green light indicates that the module has been configured and there are no errors. Red flashing: Module power supply malfunction; or input channel exceeds range. ; Or the output channel is malfunctioning, because the output has feedback detection, such as the input... The output is 10V but the actual output is only 5V. For example, if the output is 10mA but there is no connection, the actual output is 0mA.	Extinguished: The module is not configured. A solid green light indicates that the module has been configured and there are no errors. Green flashing: Input channel exceeds range (Note: Output channel does not have feedback detection and cannot detect output channel abnormalities.)
Operating temperature	- 20°C~50°C	
Dimensions (width * height * depth)	EM AE16/AE32/AQ08/AM12/AM16: 70×100×81; other modules: 45×100×81;	

Temperature acquisition module	EM AR02/AR04	EM AR08	EM AT04	EM AT08	EM AN04/08	EM AN16	EM EN88/EN4C
Configuration model	EM AR02/04	EM AE08	EM AT04	EM AE08	EM AE04/AE08	EM DP01	EM DP01
Number of channels	Route 2 / Route 4	Route 8	Route 4	Route 8	Route 4/8	Route 16	8NTC+8AI / 12NTC+4AI
Sensor type	Type: 2/3/4 wires Resistors: All supported Thermistor: only PT100/PT200/ PT500/PT1000 (temperature coefficient Pt) 0.003850)	Type: 2/3/4 lines Thermistors: Only Supports PT100 (temperature) Degree coefficient Pt 0.003850) Note: Channel configuration only Support filtering	J/K/T/E/B /N/C/R&S /TXK/XK(L) type thermocouple	Type K only thermocouple Note: Channel group State only supports filtering Wave	NTC (10K, B value: 3950)		
Temperature measurement range	- 200.0℃~850.0℃		See Note 1 in the table below.		- 50.0℃~150.0℃		
Corresponding reading range	- 2000~8500(Magnified 10 times)		(Magnified 10 times)		- 500~1500 (10x magnification)		
Over-range reading	Below the minimum value of the range: -32768 Maximum value exceeded: +32767						
Temperature channel resolution	0.1℃						
Temperature channel accuracy	0.1% of full scale		0.5% of full scale		0.1% of full scale		
Temperature acquisition time	500ms		800ms		800ms		
Sensor wire length	Maximum 100 meters		Maximum 100 meters		Maximum 30 meters		
Analog input range	-						- 0~10V or 0-20mA
Analog input accuracy	-						0.3% of full scale
Register value range	-						Voltage/Current: 0~27648
Is the passageway isolated?	isolation				none		
DIAG indicator light	Green light always on: The module is configured and powered normally, with no errors. Green light flashing: The module is not configured. Red flashing: The module power supply is abnormal (the user power alarm needs to be selected in the system block); or the channel is abnormal; or the communication with the host is abnormal (disconnect the module and check whether the connector pins are deformed or dented).						
Temperature or analog input Entry channel indicator light	Green light always on: Module configuration, power supply, and channel data are normal. Red flashing: Alarms may occur due to abnormal module power supply, disconnection of channel, or exceeding the limit (unchecking this option in the system block will prevent further alarms).						Green light always on: Module configuration, supply Electrical and channel data are normal. Green light flashing: Module power supply failure, Temperature or analog input overrange

Operating temperature	- 20°C~50°C
Dimensions (width * height * depth)	EM AN16/EN88/EN4C: 70×100×81; Other modules: 45×100×81;

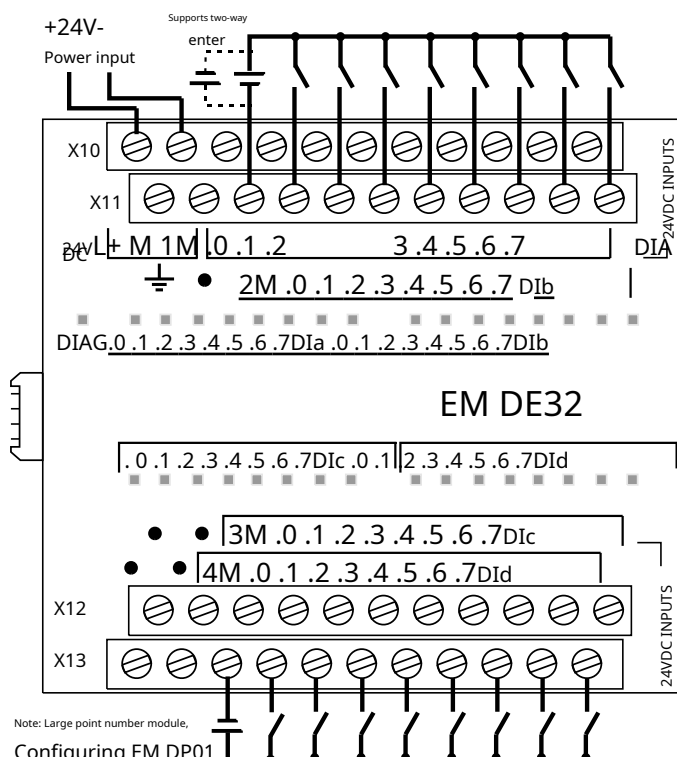
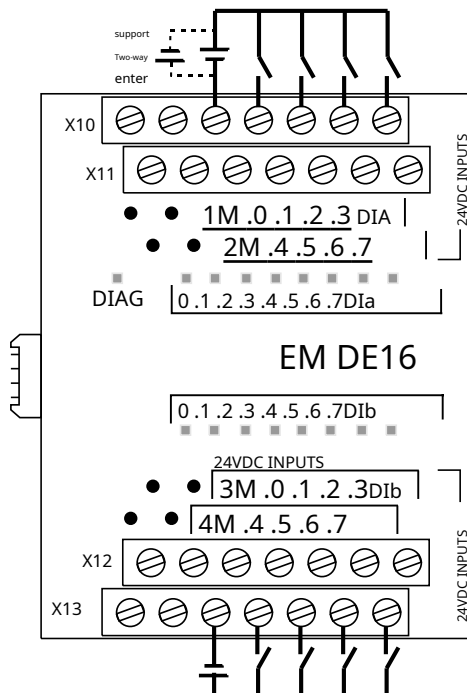
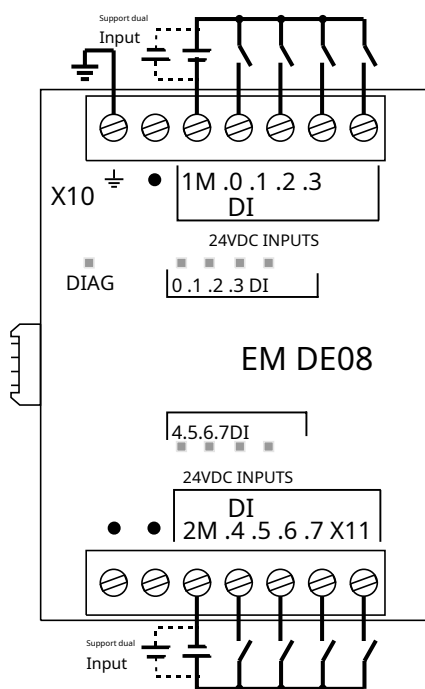
Note 1: The thermocouples supported by EM AT04/8 and their measurement range and accuracy are listed below.

type	Below the minimum value of the range	Lower limit of rated range	upper limit of rated range	Exceeding the maximum range	Rated at 25°C Range accuracy	- Rated range accuracy from 20°C to 60°C
J	- 210.0 °C	- 150.0 °C	1200.0 °C	1450.0 °C	±0.3 °C	±0.6 °C
K	- 270.0 °C	- 200.0 °C	1372.0 °C	1622.0 °C	±0.4 °C	±1.0 °C
T	- 270.0 °C	- 200.0 °C	400.0 °C	540.0 °C	±0.5 °C	±1.0 °C
E	- 270.0 °C	- 200.0 °C	1000.0 °C	1200.0 °C	±0.3 °C	±0.6 °C
R & S	- 50.0 °C	100.0 °C	1768.0 °C	2019.0 °C	±1.0 °C	±2.5 °C
B	0.0 °C	200.0 °C	800.0 °C	- -	±2.0 °C	±2.5 °C
	- -	800.0 °C	1820.0 °C	1820 °C	±1.0 °C	±2.3 °C
N	- 270.0 °C	- 200.0 °C	1300.0 °C	1550.0 °C	±1.0 °C	±1.6 °C
C	0.0 °C	100.0 °C	2315.0 °C	2500.0 °C	±0.7 °C	±2.7 °C
TXK/XK(L)	- 200.0 °C	- 150.0 °C	800.0 °C	1050 °C	±0.6 °C	±1.2 °C
Voltage	- 32512	- 27648 -80mV	27648 80mV	32511	±0.05%	±0.1%

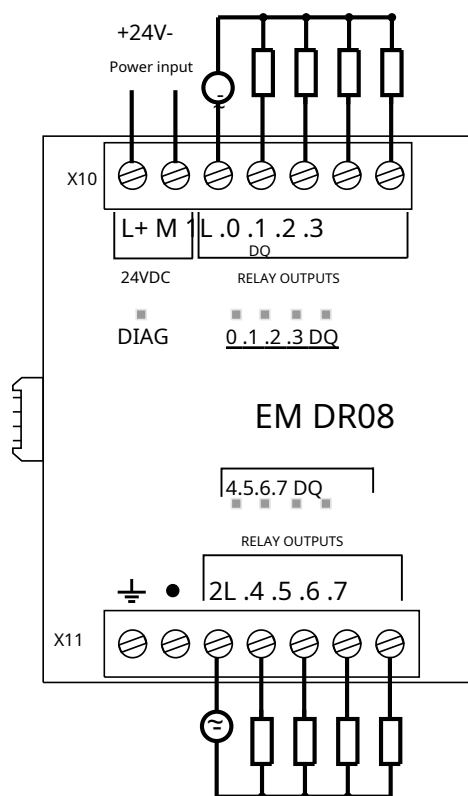
Weighing module	EM AW01/EM AW02/EM AW04	
Communication interface	The expansion port on the left allows for direct connection of a Smart PLC to the system. Block configuration EM DP01	Modbus RTU slave 485 interface
Communication speed	express	High baud rate is fast, low baud rate is slow
Sensor type and quantity	Resistive strain sensors: EM AW01: 1 channel; EM AW02: 2 channels; EM AW04: 4 channels;	
Weighing acquisition speed	Sampling time coefficient (0 corresponds to 100ms, 3 corresponds to 400ms), filtering coefficient (0~3, 3 is the deepest filtering).	
Excitation sensor signal	The weighing module provides a sensor excitation voltage of 5VDC and a maximum current of 50mA. 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 failure (user power alarm needs to be selected in the system block); or there is a channel exceeding the limit alarm;	
Weighing input channel indicator light	Green light always on:Power supply and channel data are normal. Red flashing:Module power supply abnormality or over-limit alarm (over-limit alarm can be canceled by modifying the channel range).	
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;	

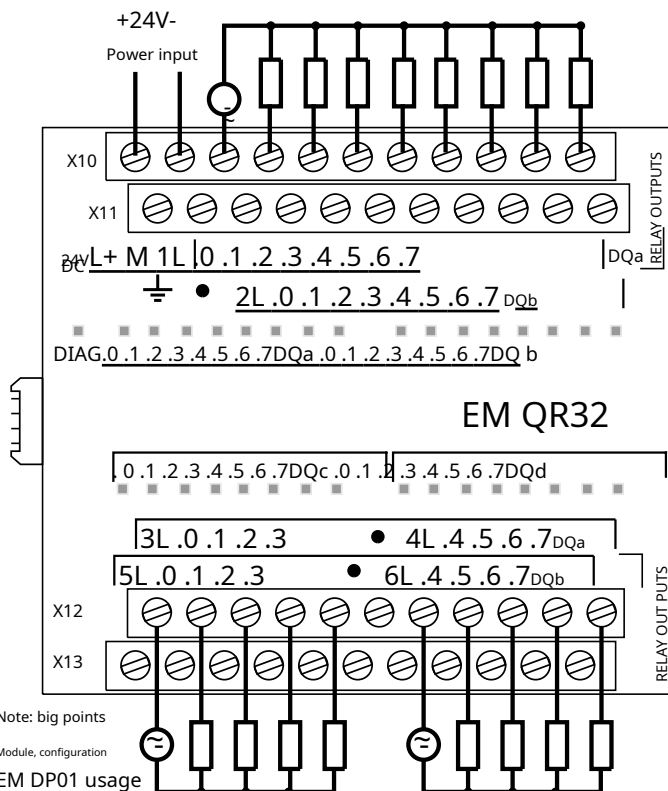
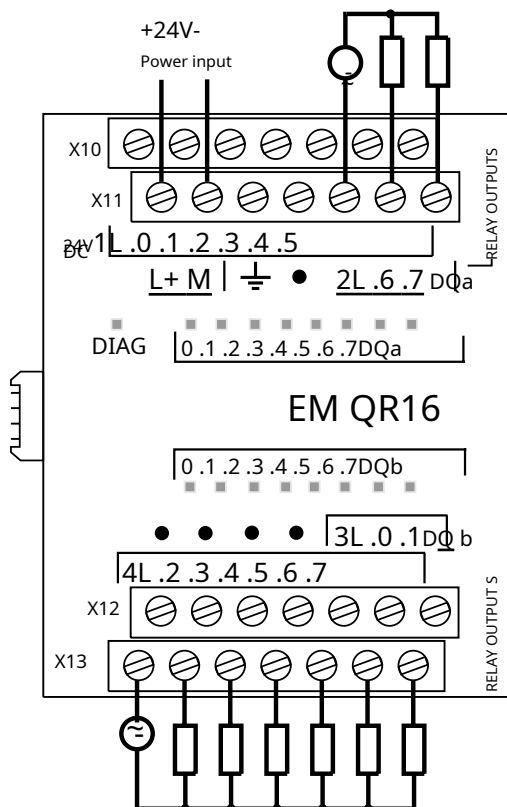
Note: The EM AW04 module user manual is quite long and is not shown in this document. Please download the "【Weighing Module】EM AW01_2_4" from the website. document. (See also "【Weighing Module】EM AW01_2_4 Test Project")

3.4 Expansion module wiring diagram



Note: Large point number module,
Configuring EM DP01

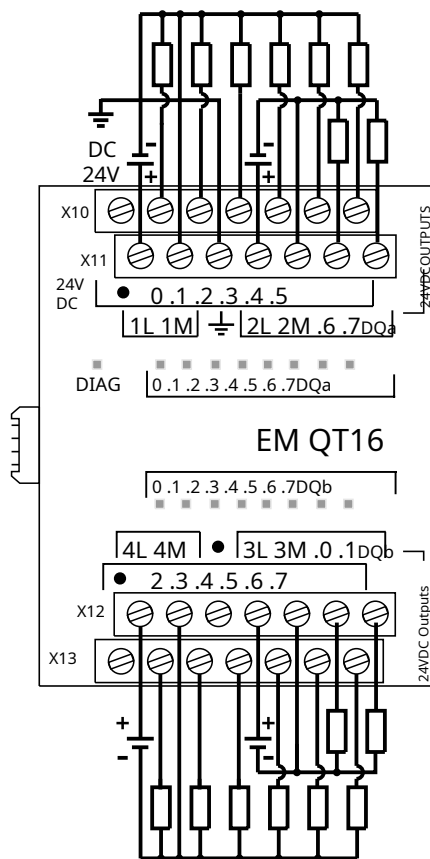
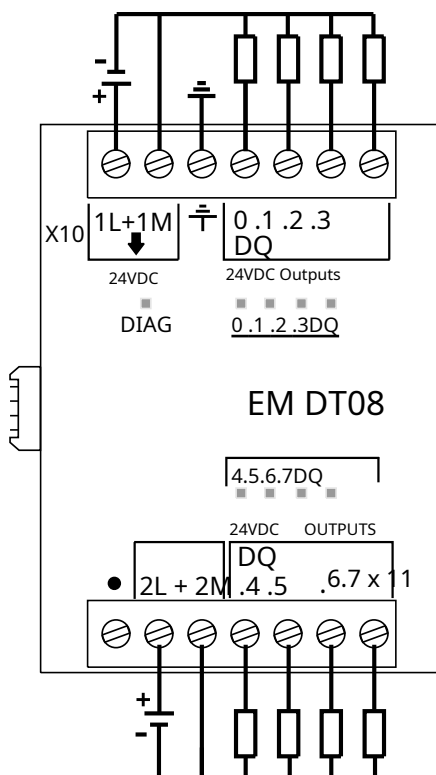


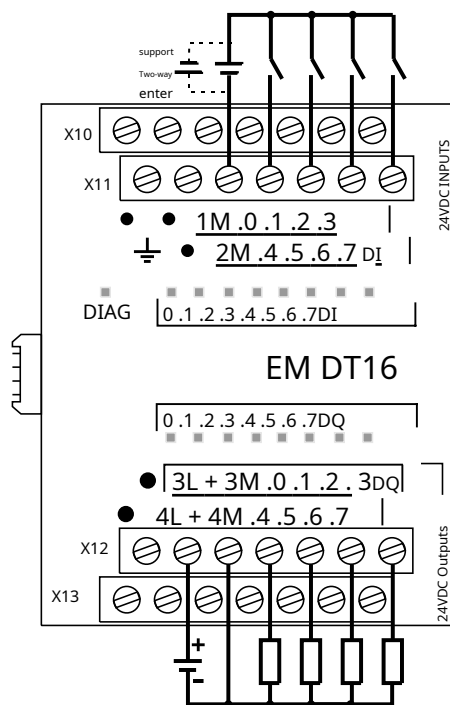
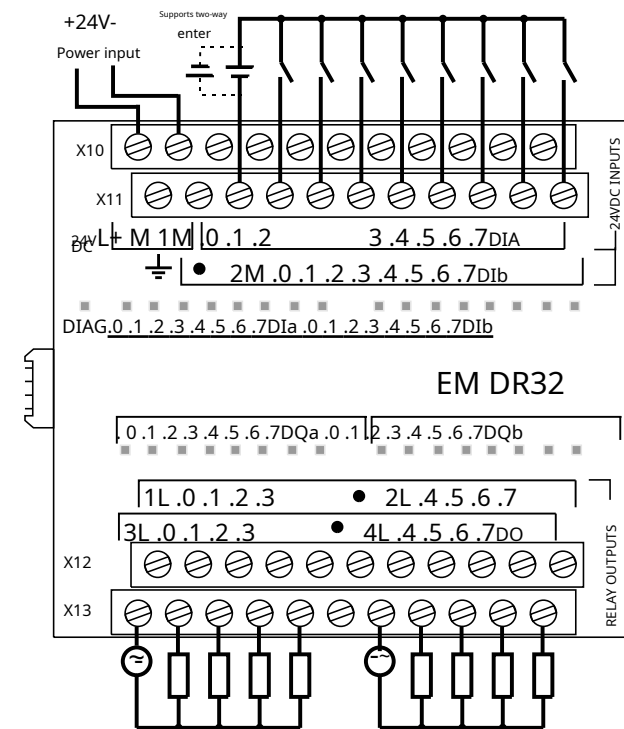
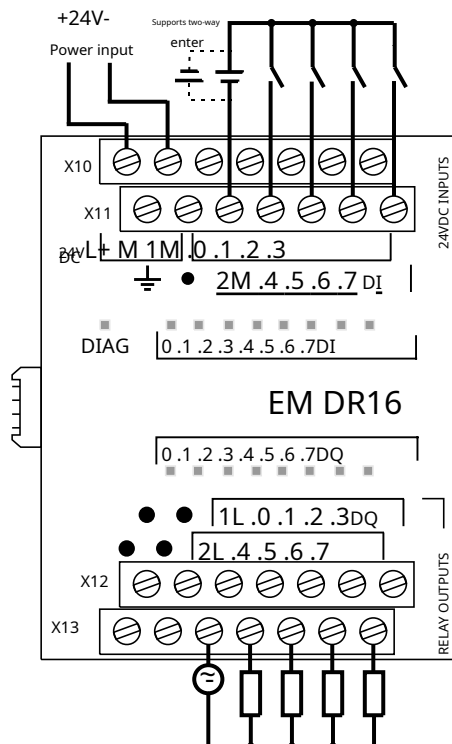
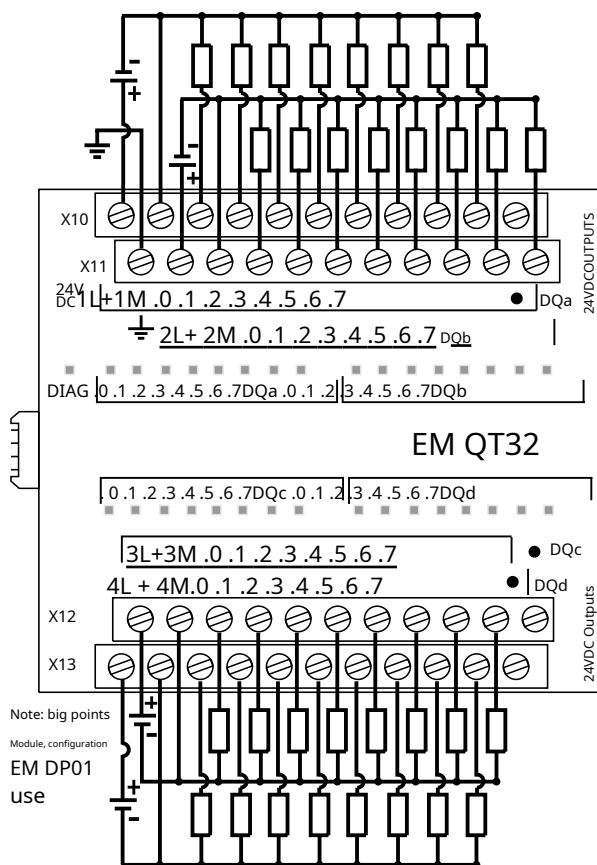


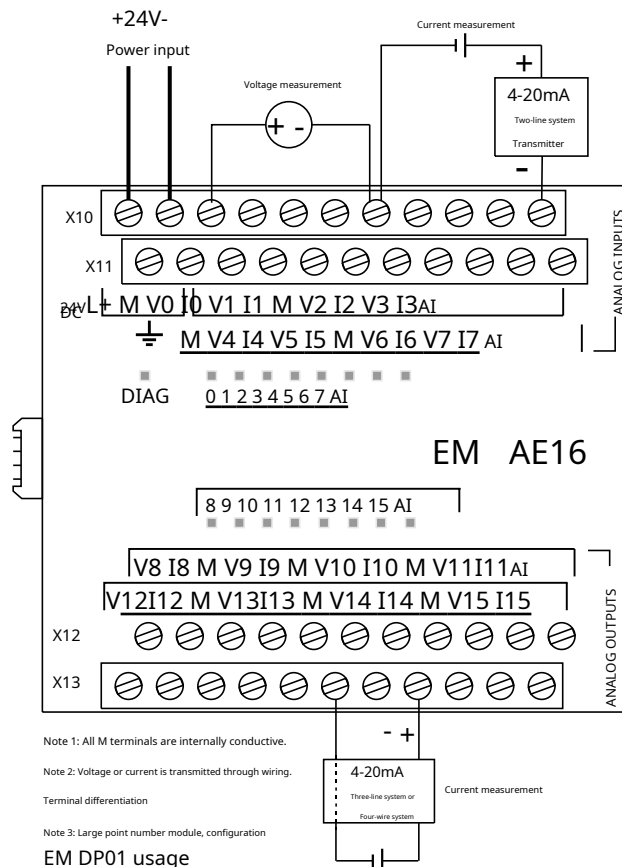
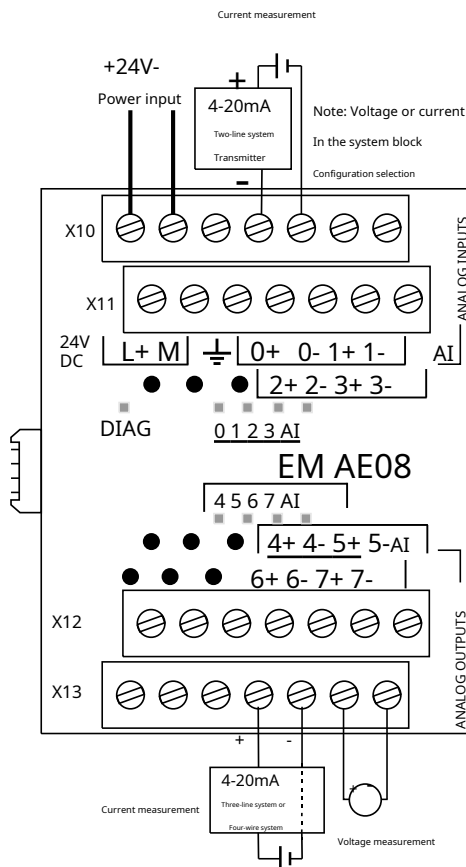
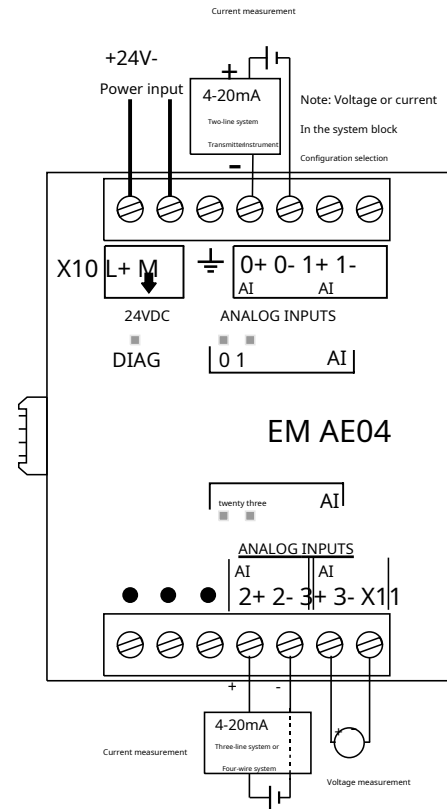
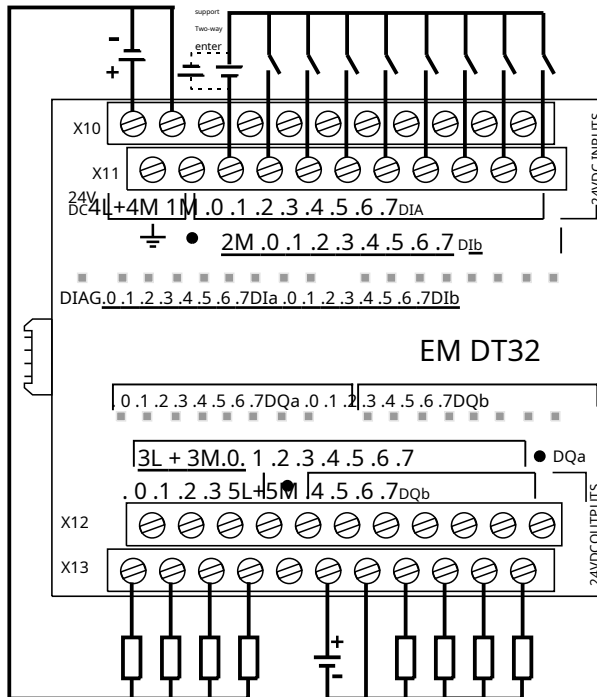
Note: big points

Module, configuration

EM DP01 usage







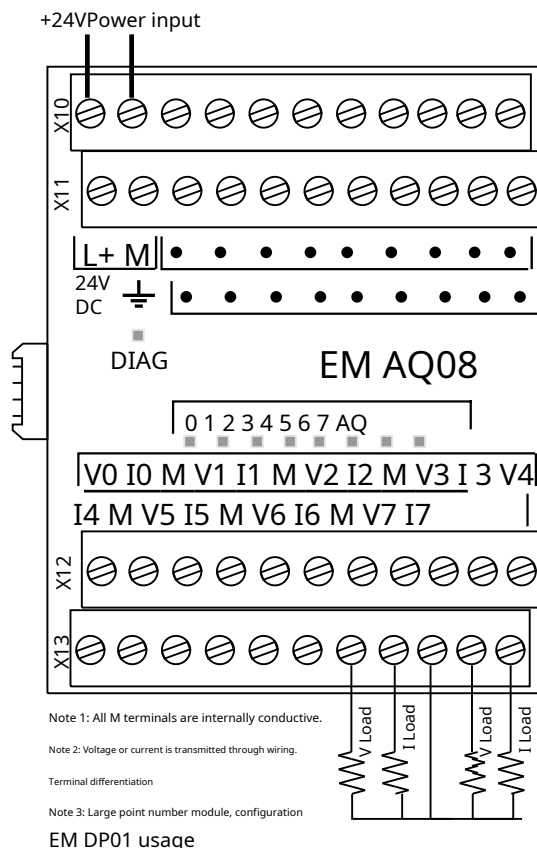
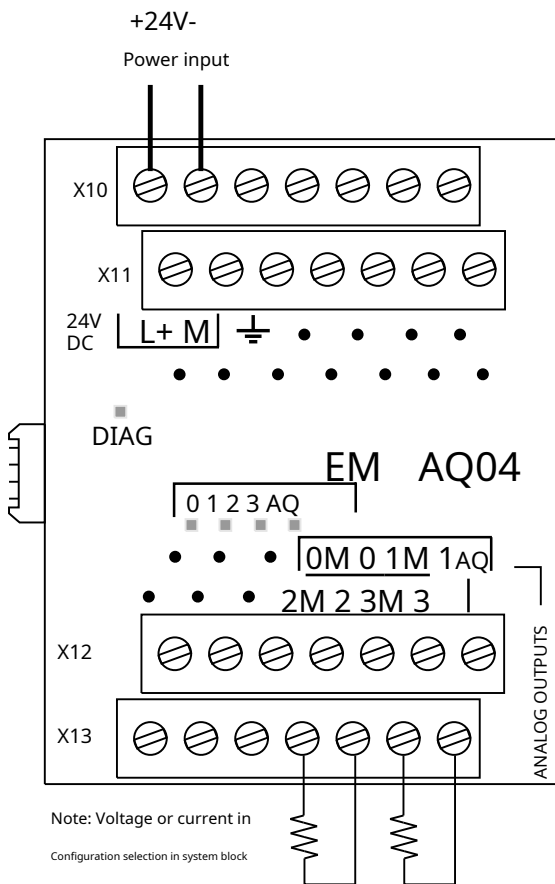
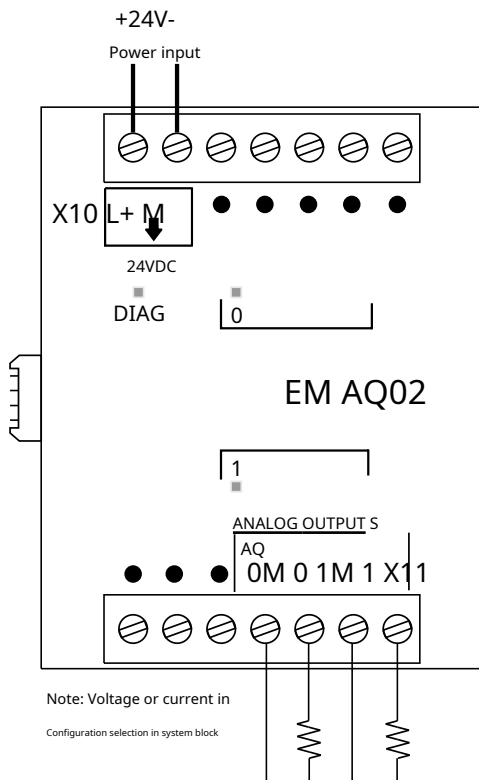
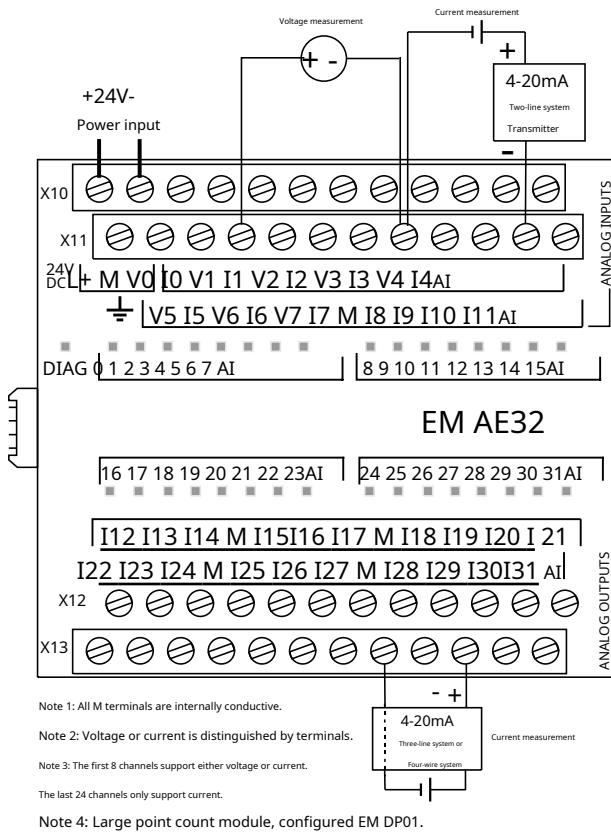
Note 1: All M terminals are internally conductive.

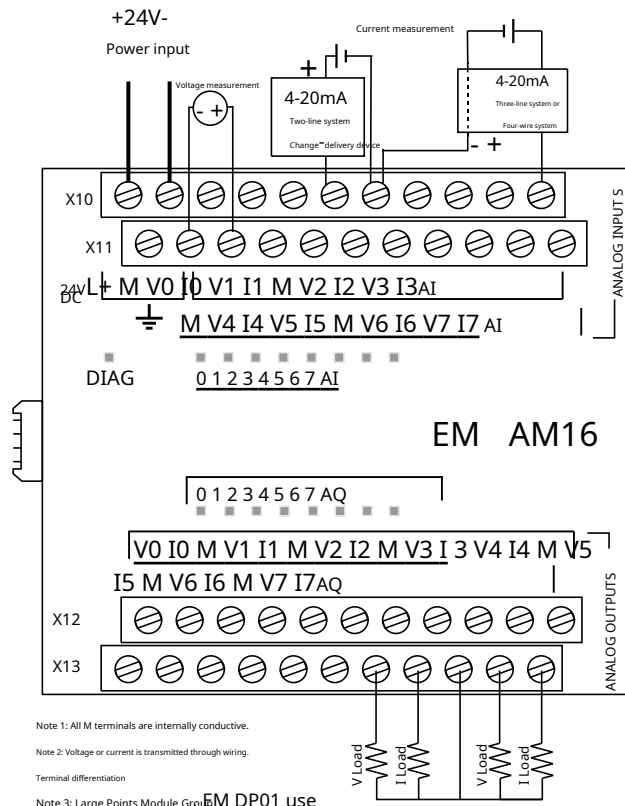
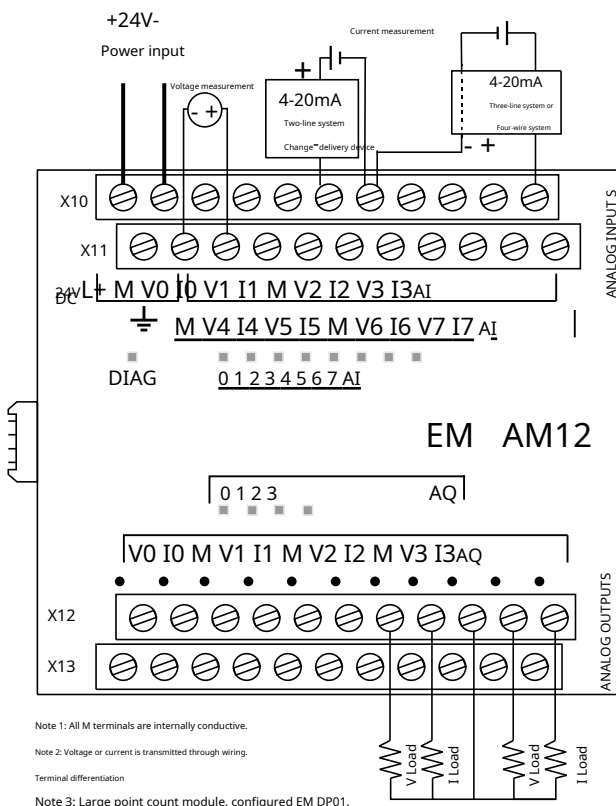
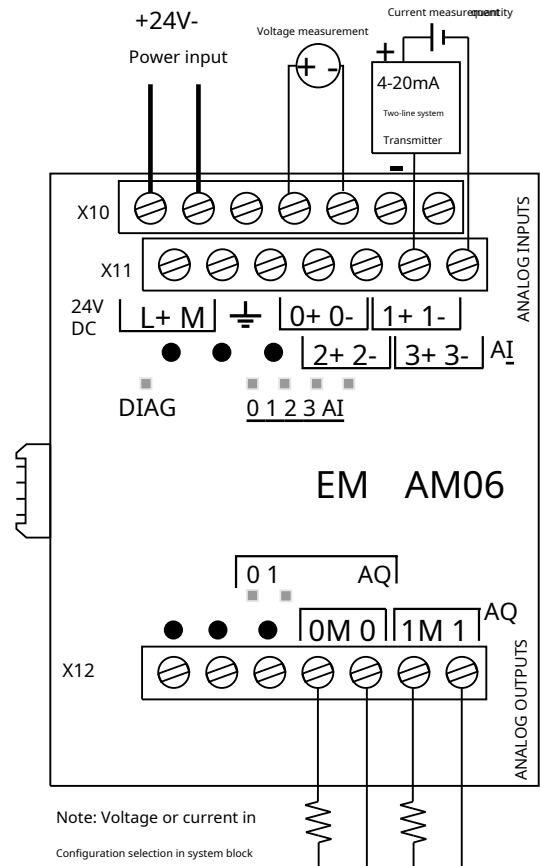
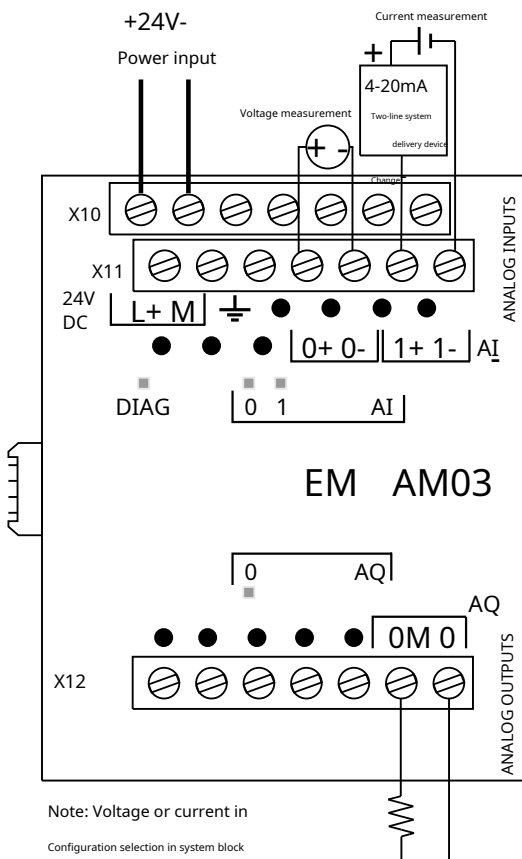
Note 2: Voltage or current is transmitted through wiring.

Terminal differentiation

Note 3: Large point number module, configuration

EM DP01 usage





Note 1: All M terminals are internally conductive.

Note 2: Voltage or current is transmitted through wiring.

Terminal differentiation

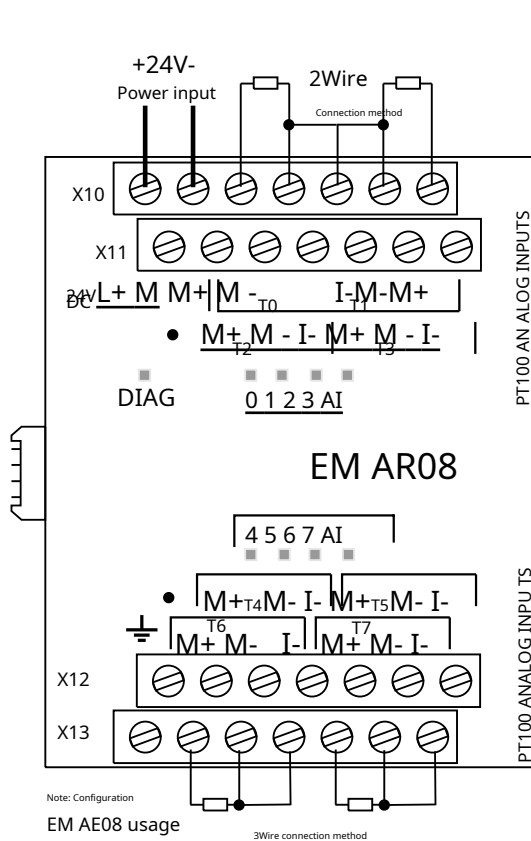
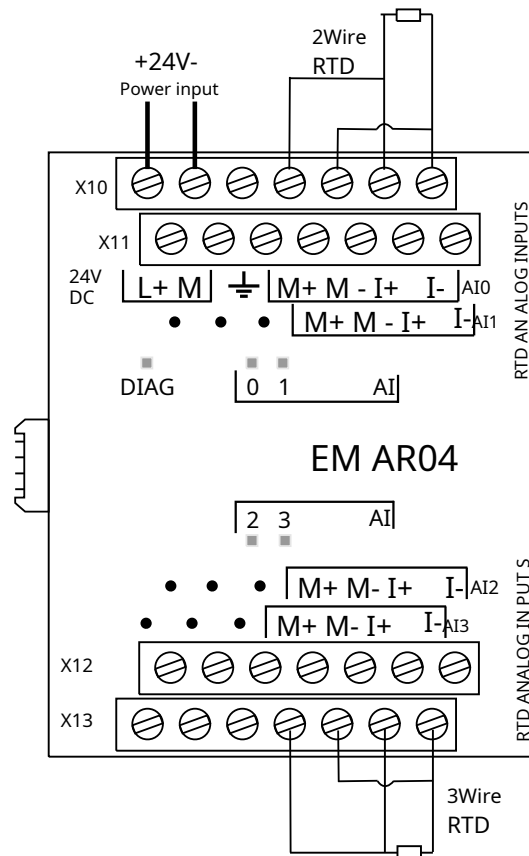
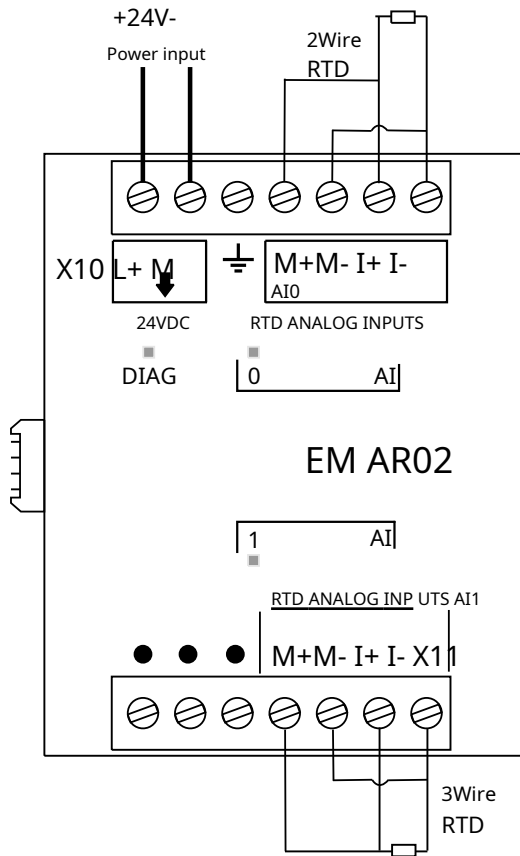
Note 3: Large point count module, configured EM DP01.

Note 1: All M terminals are internally conductive.

Note 2: Voltage or current is transmitted through wiring.

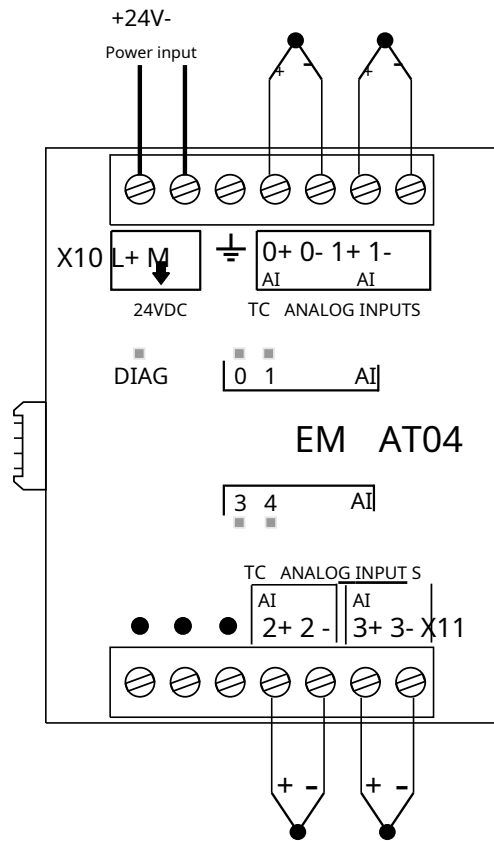
Terminal differentiation

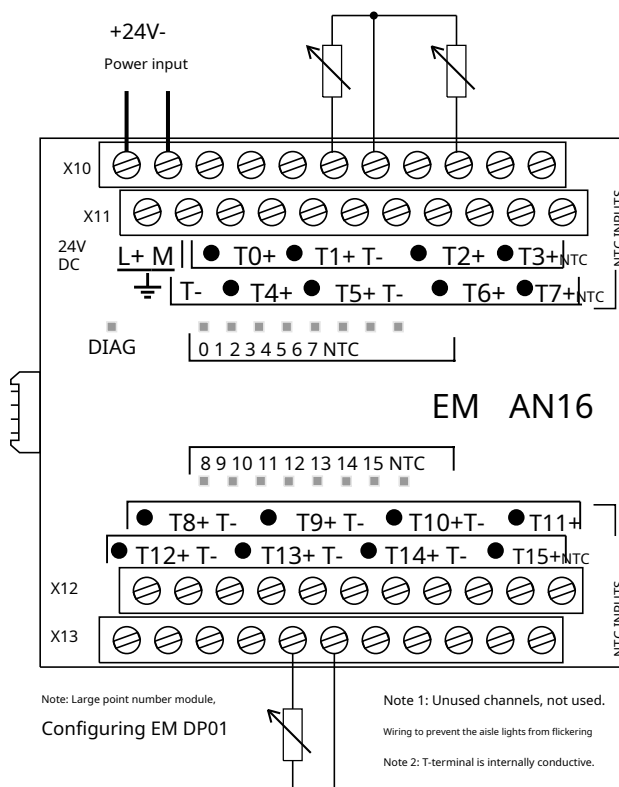
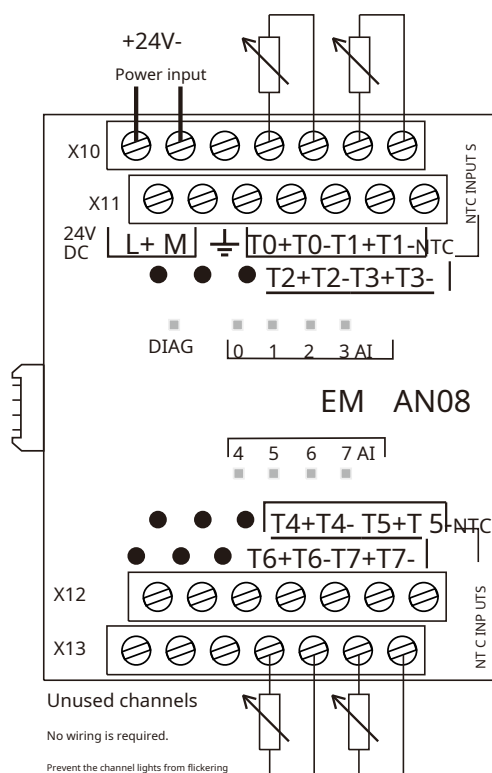
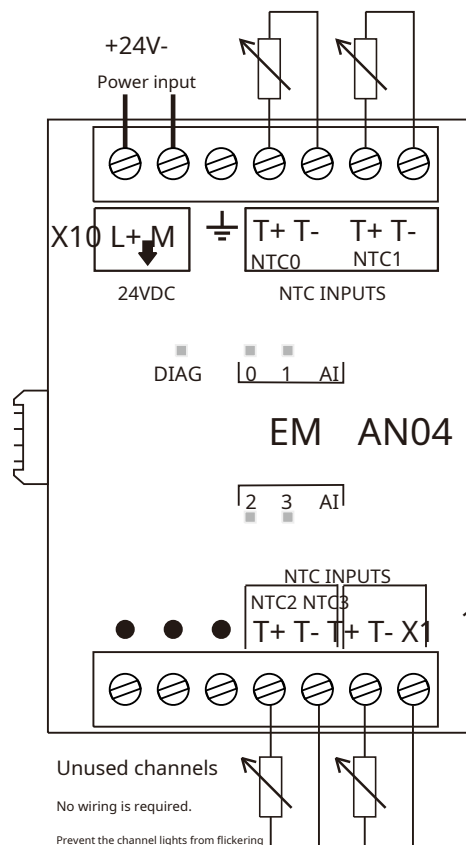
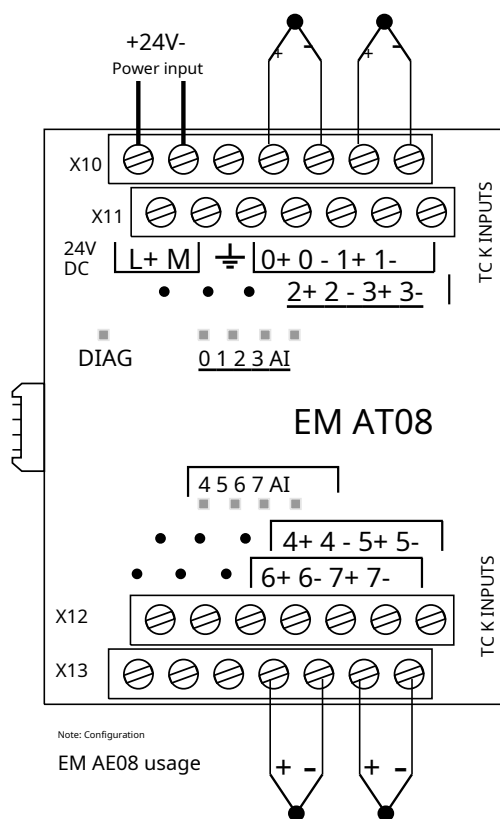
Note 3: Large Points Module Group EM DP01 use



Note: Configuration
EM AE08 usage

3Wire connection method





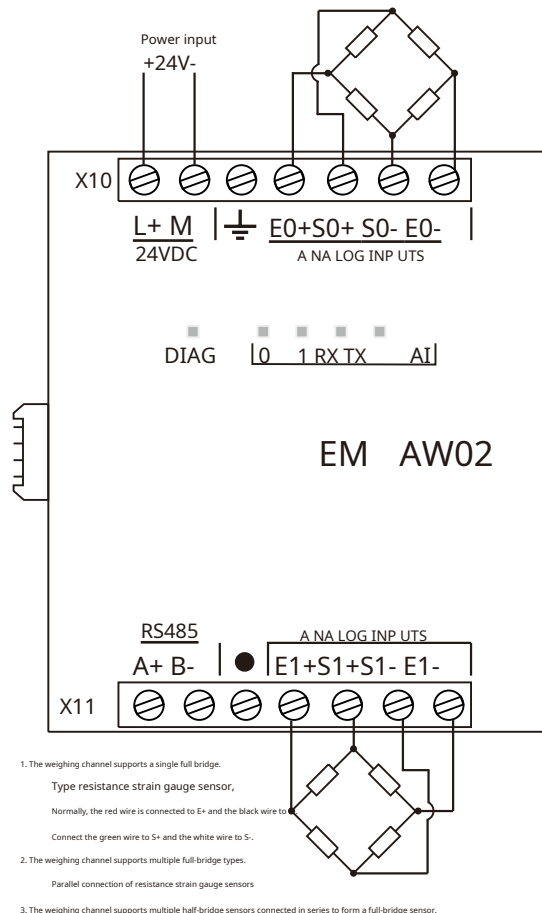
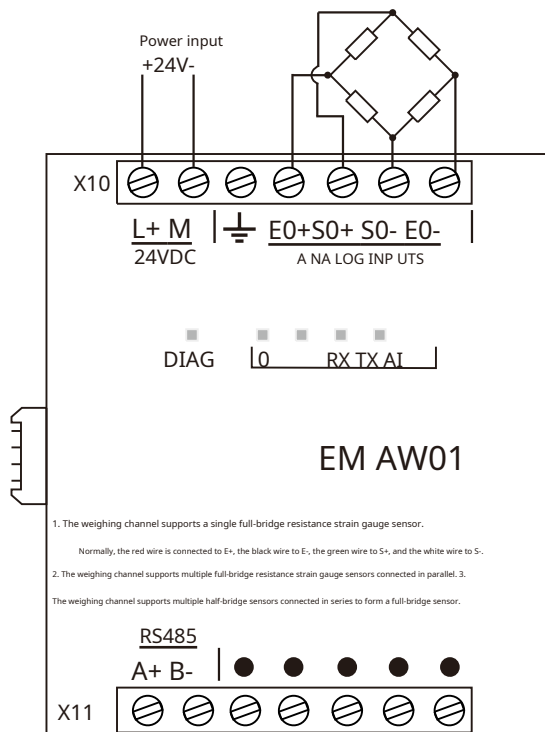
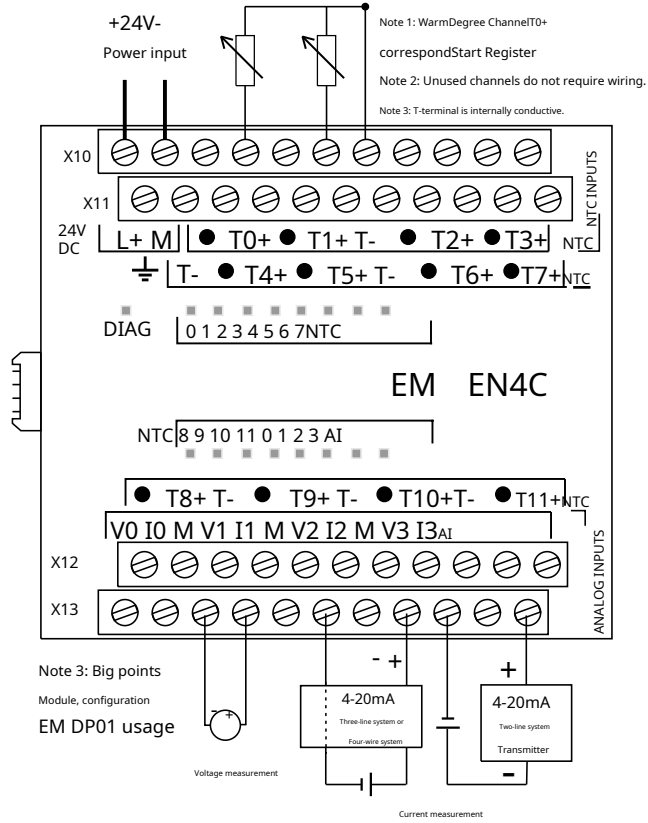
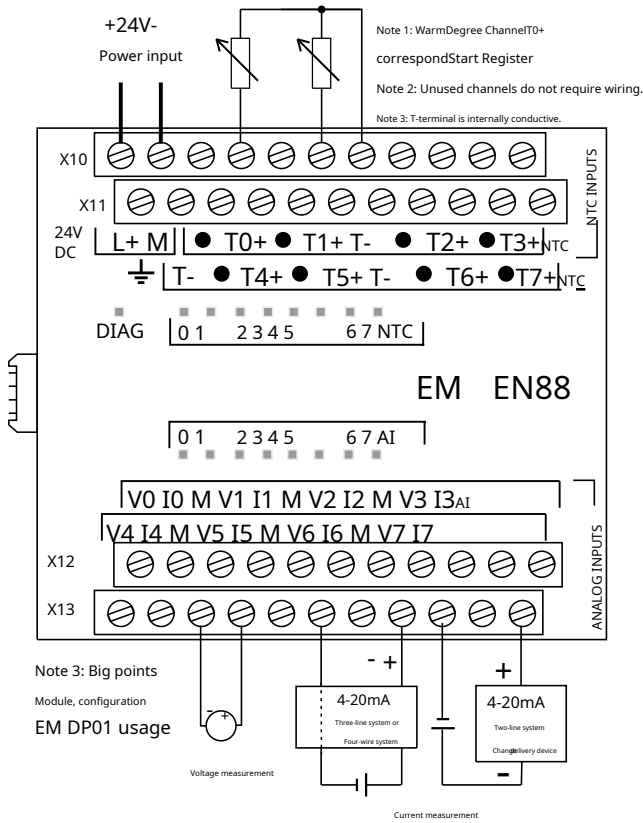
Note: Large point number module,

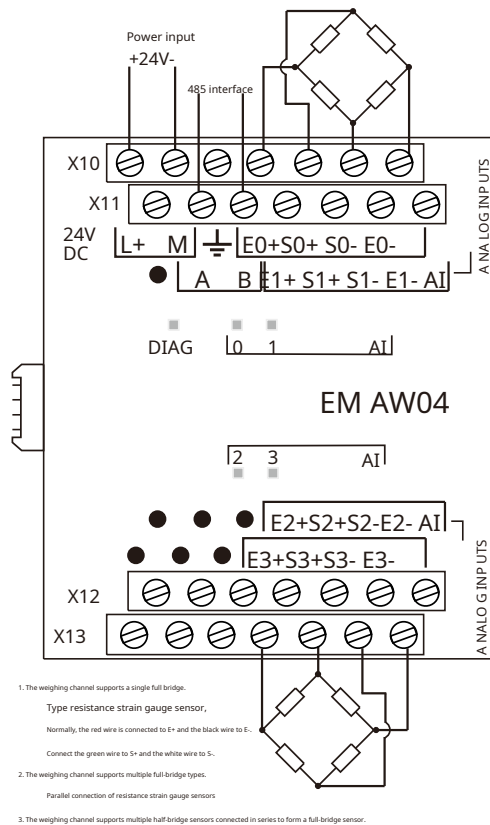
Configuring EM DP01

Note 1: Unused channels, not used.

Wiring to prevent the aisle lights from flickering

Note 2: T-terminal is internally conductive.





Note: EM AW01/2/4 The module user manual is quite long and is not shown in this document. Please download the " [Gongbei Electronics] Scale" from the website.

"Re-module User Manual" and " [Gongbei Electronics] Weighing Module Data Package "

3.5 Frequently Asked Questions

3.5.12 Can the Gongbei Smart expansion module be directly connected to the Smart host? A: Yes.

3.5.3 What do the on/off statuses of the indicator lights on/off in the analog module channels represent? What about the temperature module? A: Each model is different; please refer to section "3. Technical Parameters" in this document.

3.5.4 Is the value read from the temperature extension module channel a temperature value?

A: Yes, it's a temperature value magnified 10 times, so no further conversion is needed. For example, reading 123 means 12.3 degrees Celsius.

3.5.4 In the information table, the V memory address of the Gongbei large-point module is displayed as 0, and the status is "DP communication not started after power-on". A: EM DP01 must be configured in the large-point module system block, and the system block must be downloaded for it to display correctly in the information table.

3.5.5 Explanation of Special Registers for Extension Modules

①: Diagnostic alarm code: To determine which device is triggering the alarm, check "Diagnostic Alarm Device ID"

16#FFFF // Default state upon power-on;

16#0000 // Normal operating status or communication is normal but not configured;

16#4023 // Configuration parameters do not match the device type;

16#4011 // Analog device lacks user power;

16#0007 //AI Channel x Upper Limit Alarm;

16#0008 //AI Channel x Lower Limit Alarm;

16#8x07 //AO Channel x Upper Limit Alarm;

16#8x08 //AO Channel x Lower Limit Alarm;

16#8x01 //AO Channel x Short Circuit Alarm;

16#8x06 //AO Channel x Open Circuit Alarm;

②: Diagnostic Alarm Device ID: The ID of the device that triggered the diagnostic alarm, ranging from 1 to 16. If multiple devices trigger diagnostic alarms, only the device ID with the smallest value will be displayed.

③: Disconnection Error Device ID: The ID of the device that experienced the communication error, ranging from 1 to 16. If multiple devices experience communication disconnection, only the device ID with the smallest value will be displayed.

④: Data type string, which can be monitored and viewed in the status table in the form of "ASCII".

4. Signal board usage

The Gongbei Smart series signal boards feature plug-and-play functionality through a unique bus technology, requiring no library installation.

Note: The Gongbei Smart standard main unit does not support the "original" SB AE01, SB AQ01, and SB BA01. It does support the "original" SB CM01 and SB DT04.

4.1 Installing and removing the signal board



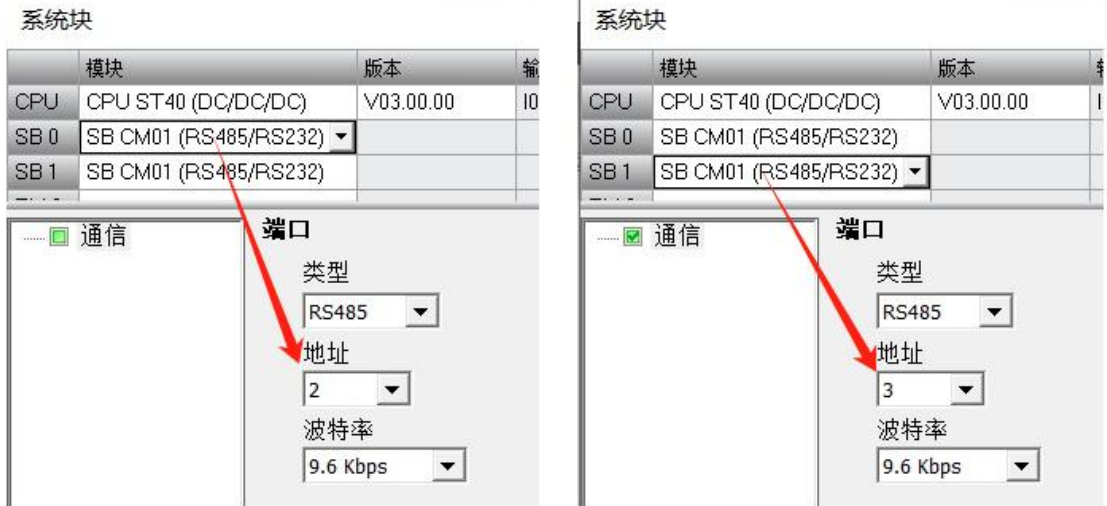
Note: Smart main unit does not support hot-swapping. **Absolutely prohibited** For live installation and removal of the signal board, refer to Section 3.3.3 of the Smart System Manual. An excerpt follows:

表格 3-3 在 CPU 中安装信号板

任务	步骤
	请按以下步骤安装信号板或电池板 1. 确保 CPU 和所有 S7-200 SMART 设备与电源断开连接。 2. 卸下 CPU 上部和下部的端子块盖板。 3. 将螺丝刀插入 CPU 上部接线盒盖背面的槽中。 4. 轻轻将盖撬起并从 CPU 上卸下。 5. 将信号板或电池板直接向下放入 CPU 上部的安装位置中。 6. 用力将模块压入该位置直到卡入就位。

4.2 Signal Board Configuration Selection

- For the SB CM01 and SB CM02 signal boards, simply select SB CM01 in the configuration. Just note that SB CM02 can only be used for 485 communication.
- For the SB DE02, SB QT02, and SB DT04 signal boards, simply select SB DT04 in the configuration; the address is shown in the configuration table.
- For all other models, configure it as SB CM01 in the system block, as shown in the figure below.



illustrate 1 Installed in SB0 The slot needs to be set to an address. 2 Installed SB1 The slot needs to be set to an address. 3. two
Type can only be selected RS485 The baud rate can only be selected. 9.6Kbps .
illustrate 2: The image above is V3.0 software, There are two signal board slots, For older versions of programming software, only SB0 groove
If that's the position, then set it as shown in the left image.

Download the system block into the PLC and run it. The LINK indicator light in the upper left corner of the signal board will light up, indicating successful setup.

4.3 The register mapping relationship is shown in the table below.

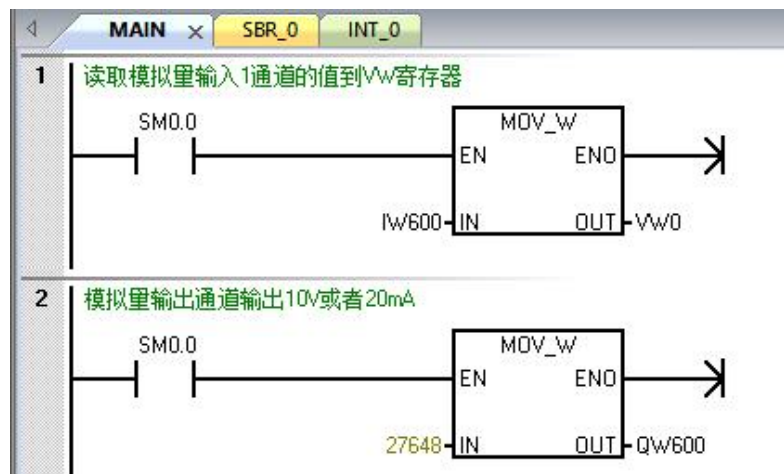
- After configuration and download, the resources will be automatically mapped into the host machine and can be used directly.
- SB DE02, SB QT02, The resource addresses for SB DT04 can be viewed in the configuration table; these three methods are not applicable in this section.
- For other models, when installing a signal board in slot SB0, select configuration address 2, with input resource start address I600 and output resource start address Q600. When installing a signal board in slot SB1, select configuration address 3, with input resource start address I616 and output resource start address Q616. See the following figure for details.
- Signal boards of version V30 or later support the Smart V3 host. The version number is located on the top front of the signal board casing, for example, GB-H4AJU703-V31, with the last 3 digits indicating the version number. See the image below.

Analog signal or temperature channel		describe	For example
SB0 slot, Configuration address 2	SB1 slot, Configuration address 3		
IW600	IW616	Input channel 0 acquisition value	For example, if the SB AM06 signal board is installed in slot SB0 and the configuration address is set to 2, then the analog input values will be stored sequentially in IW600, IW602, IW604, and IW606. If the input value is 27648, it indicates that 10V or 20mA has been input. Assigning a value of 27648 to QW600 will allow it to output 10V or 20mA through its analog output channel 1. Assigning a value of 13824 to QW602 will allow it to output 5V or 10mA through its analog output channel 2.
IW602	IW618	Input Channel 1 Acquisition Value	
IW604	IW620	Input Channel 2 Acquisition Value	
IW606	IW622	Input channel 3 acquisition value	
IW608	IW624	Input channel 4 acquisition value	
IW610	IW626	Input channel 5 collected values	For example, the SB AR02 signal board is installed in slot SB1, with the configuration address set to 3. The temperature acquisition values are stored sequentially in IW616 and IW618. For example, the acquisition value is 123, which means the current temperature is 12.3 degrees Celsius, and the acquisition value is amplified by 10 times.
QW600	QW616	Output Channel 0 Setting Value	
QW602	QW618	Output Channel 1 Setting Value	
QW604	QW620	Output Channel 2 Setting Value	
QW606	QW622	Output Channel 3 Setting Value	

Digital channel address		describe	For example
SB0 slot, Configuration address 2	SB1 slot, Configuration address 3		
I600.0	I616.0	Input channel 0	For example, SB DE04 is installed in slot SB0, with the configuration address set to 2. The digital input signals are sequentially mapped to I600.0, I600.1, I600.2, and I600.3. A value of 1 indicates that there is a digital input signal.
I600.1	I616.1	Input Channel 1	
I600.2	I616.2	Input Channel 2	
I600.3	I616.3	Input Channel 3	
I600.4	I616.4	Input Channel 4	
I600.5	I616.5	Input Channel 5	For example, SB QT04 is installed in slot SB1, configured with address 3, and its output signals are mapped to Q616.0, Q616.1, Q616.2, and Q616.3. If Q616.2 is assigned a value of 1, the digital output channel 3 will output 24V.
Q600.0	Q616.0	Output channel 0	
Q600.1	Q616.1	Output Channel 1	
Q600.2	Q616.2	Output Channel 2	
Q600.3	Q616.3	Output Channel 3	
Q600.4	Q616.4	Output Channel 4	Special attention : SB DE02, SB QT02, SB DT04. Select SB DT04 in the configuration. The mapping address can be found in the configuration table.
Q600.5	Q616.5	Output Channel5	
Special registers		describe	
IB612 or I612.0 (corresponding to slot SB0, signal board configured with address 2)		The heartbeat register, either 0 or 1, changes every 0.5 seconds to determine the communication status. Note: Only applicable to version V30. Not supported Heartbeat register function. Supported in all other versions. The version number is located on the top front of the signal board housing, for example, GB-H4AJU703V31, with the last 3 digits indicating the version number. For signal boards without a version number, the heartbeat register is IB620.	
IB628 or I628.0 (corresponding to SB1 slot, signal board configured with address 3)			
QW610 (corresponding to SB0 slot, configuration) (Signal board at address 2)		Analog input filtering function (setting range 0-4, 4 levels in total): 1: Sampling period approximately 20ms, lightest filtering. 2 or 0 (default): Approximately 100ms. 3: Approximately 150ms filtering. 4: Approximately 200ms heavy filtering.	
QW624 (corresponding to slot SB1, configuration) (Signal board at address 3)			
		Note: The analog input filtering function is not saved after power failure; the host computer must continuously assign values.	

Tip: The starting address of the mapped register is printed on the back of the circuit board, which can be viewed quickly.

Now you can directly read and write the mapped registers. Taking SB AM06 as an example, it is installed in slot SB0, configured with address 2, and the read/write resources are shown in the following figure.



Network 1 indicates that the value of the first analog input channel is read into VW0;

Network 2 indicates that the first analog output channel outputs 20mA or 10V. (27648 corresponds to full-scale 10V and 20mA)

4.4 Signal board technical parameters

Communication signal board technical parameters	SB CM01	SB CM02
RS485 Function	Cable length: 1000 meters; Insulation: None	Cable length: 1000 meters; Insulation: None
RS232 function	Cable length: 10 meters; Insulation: None	—

Digital signal board	SB DE02	SB DE04	SB DE06	SB DT04	SB QT02	SB QT04	SB QT06
Number of channels	2	4	6	2 in, 2 out	2 out	4 out	6 out
Digital input type	Sink or source input (supports bidirectional input; common terminal can be positive or negative).						
Digital input voltage	Logic 1 Minimum voltage: 15VDC at 2.5mA						
	Logic 0 Maximum voltage: 5VDC at 1mA						
Digital input isolation	Internal optical isolation						
Digital output types	Source type						
Maximum output current	0.5A						
Digital output isolation	Internal optical isolation						
L+,M Rated Voltage	24VDC (maximum 30VDC)						

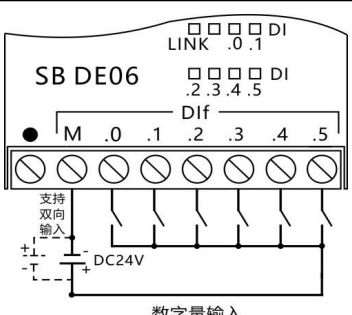
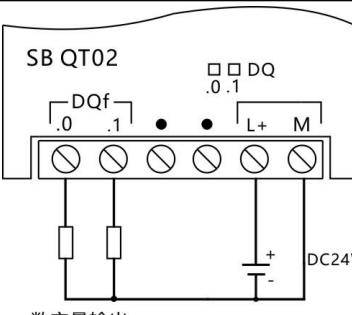
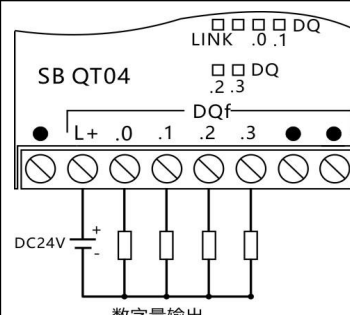
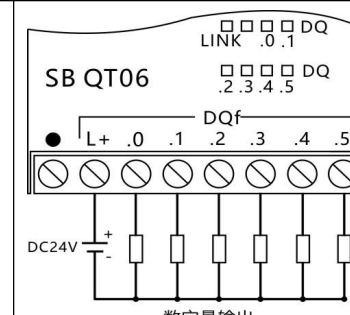
Analog Input Specifications	SB AE02	SB AM03	SB AM04	SB AE04	SB AM05	SB AM06	SB AE06
Input number	2-channel voltage or current			4-channel voltage or current			6-channel voltage or current
Measurement range	0-10V, 0-20mA						
Full scale range	0-27648						
accuracy	0.3% of full scale						
isolation	none						

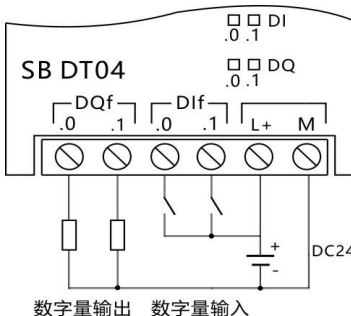
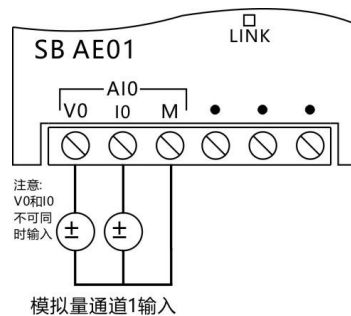
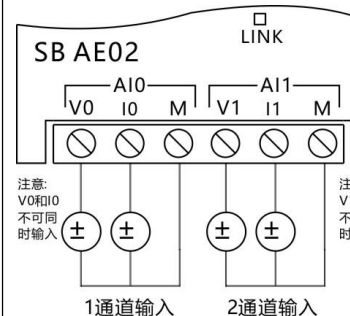
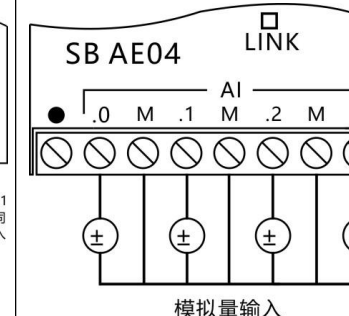
Analog output specifications	SB AM03	SB AM05	SB AM04	SB AM06	SB AQ02	SB AQ04
Number of output channels	1. Voltage or current of the circuit		2-channel current	2-channel voltage or current		4-channel current
resolution	Voltage: 11 bits + sign; Current: 11 bits					
Full scale range (data words)	0 to 27,648 corresponds to 0-10V and 0-20mA.					
accuracy	0.3% of full scale					
Load impedance	Voltage: $\geq 1000\Omega$ Current: $\leq 600\Omega$					
isolation	none					
Maximum cable length	10m shielded twisted pair cable					

Temperature signal board	SB AR02	SB AR04	SB AN04	SB AN06	SB AT04
Number of channels	Route 2	Route 4	Route 4	4-way + 2-way AI	Route 4
Sensor type	2, 3, and 4-wire PT100	PT100 with only 2 wires	NTC (10K, 3950)		K-type thermocouple
Temperature measurement range	- 200.0°C~600.0°C		- 50.0°C~150.0°C		- 270.0°C~1372.0°C
Reading range	- 2000~6000 (10x magnification)		- 500~1500 (10x magnification)		- 2700~13720 (10x magnification)
Open circuit and short circuit detection	±32000		±32000		±32000
resolution	0.1°C		0.1°C		0.1°C
accuracy	0.1% of full scale		0.5% of full scale		0.1% of full scale
Collection time	300ms	800ms	200ms		800ms
Wire length	Maximum 100 meters		Maximum 30 meters		Maximum 20 meters
Whether to isolate	isolation	isolation	none	none	isolation

4.5 Signal board wiring diagram and DIP switches

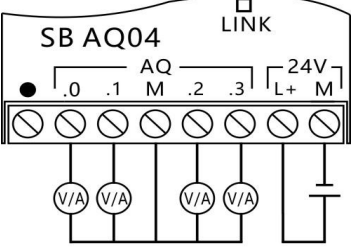
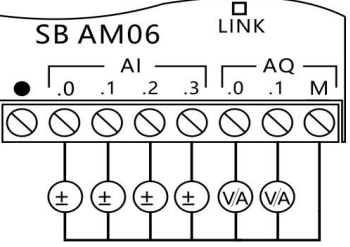
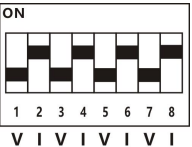
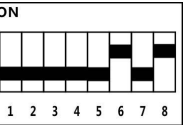
SB CM01Wiring diagram	SB CM02Wiring diagram	SB DE02Wiring diagram	SB DE04Wiring diagram
485接口或者232接口	485接口	数字量输入	数字量输入
Terminal Definition	Terminal Definition	Terminal Definition	
Ground: Used to connect shielded wires	Ground: Used to connect shielded wires	Dif:	0: No.1 aisle
TX/B: RS232-Tx/RS485 Defined A	A: 485 Standard A	number	1: No.2 aisle
RTS: Request to send (TTL)	M: Signal ground	Volume	M: 24V Common power supply terminal, supports
M: Signal ground, logical common terminal	B: 485 Standard B	enter	It supports bidirectional input, which can be positive or negative.
RX/A: RS232-Rx/RS485 Defined B	● null	Register mapping: I7.0, I7.1	
5V: +5V Power output, maximum 50mA	Note 1 Direct configuration SB CM01 use.	Note Direct configuration SB DT04 use.	
Note: 485 Wiring, and 485 The standard definition is the opposite; if the connection fails, it can be swapped. A, B Try the thread sequence.		Note Each passageway has an indicator light.	
Note: Direct configuration SB CM01 use.		Register mapping: I600.0, I600.1, I600.2, I600.3	
		Note 1 Each passageway has an indicator light.	

SB DE06Wiring diagram	SB QT02Wiring diagram	SB QT04Wiring diagram	SB QT06Wiring diagram
			
Terminal Definition	Terminal Definition	Terminal Definition	Terminal Definition
DIf: number Character quantity lose enter	DQf: transistor Output Channel	DQf: transistor Output Channel	DQf: crystal Body duct Exit passage
M:24VCommon power supply terminal, supports It supports bidirectional input, which can be positive or negative	0: No.1aisle 1: No.2aisle	L+:24VPower positive 0: No.1aisle 1: No.2aisle 2: No.3aisle 3: No.4aisle	0: No.1aisle 1: No.2aisle 2: No.3aisle 3: No.4aisle 4: No.5aisle 5: No.6aisle
0: No.1aisle ... 5: No.6aisle	L+ 24VPower positive M 24VPower supply negative	Register mapping:Q70.0,Q7.1 Note1 Each passageway has an indicator light.	Register mapping:Q600.0,Q600.1, Q600.2,Q600.3 Note1 Each passageway has an indicator light.
Register mapping:I600.0,I600.1, I600.2,I600.3,I600.4,I600.5 Note1 Each passageway has an indicator light.			Register mapping:Q600.0,Q600.1, Q600.2, Q600.3,Q600.4,Q600.5 Note1 Each passageway has an indicator light.

SB DT04Wiring diagram	SB AE01Wiring diagram	SB AE02Wiring diagram	SB AE04Wiring diagram	
				
Terminal Definition	Terminal Definition	Terminal Definition	Terminal Definition	DIP switch settings
DQf:transistor Output Channel	AIsimulation V0: No.1Channel voltage input Volume Channel I0: No.1Channel current input	AIsimulation V0: No.1Channel voltage input Volume Channel I0: No.1Channel current input	AIsimulation V0: No.1Channel voltage input Volume Channel I0: No.1Channel current input	I ON OFF V 1 2 3 4
DIfInput channel 0: No.1aisle 1: No.2aisle	1enter M: No.1Public access point	1enter M: No.1Public access point	1enter M: No.1Public access point	0: No.1Road input 1: No.2Road input 2: No.3Road input 3: No.4Road input
L+ 24VPower positive	Register mapping:IW600 Note1 Each passageway has an indicator light.	Register mapping:IW600, IW602 Note: Each channel supports either voltage or current input. Distinguish by wiringVandISimultaneous input is not allowed.	Register mapping:IW600, IW602, IW604, IW606 Note: Each channel supports either voltage or current input. Distinguish by wiringVandISimultaneous input is not allowed.	Each DIP switch pair Yingyi individual aisle, ONFor current, OFF It represents voltage.
M 24VPower supply negative				
Note1 Direct configurationSB DT04Use. Note2 Each passageway has an indicator light.				

SB AE06Wiring diagram	SB AQ01Wiring diagram	SB AQ02Wiring diagram
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SB AE06 LINK AI .0 .1 .2 .3 .4 .5 M ± ± ± ± ± ± 模拟量输入 <td colspan="2"> SB AQ01 LINK AQ0 V0 I0 M V 模拟量输出 </td> <td colspan="2"> SB AQ02 LINK AQ0 V0 I0 M V V 模拟量输出 模拟量输出 </td>		SB AQ01 LINK AQ0 V0 I0 M V 模拟量输出		SB AQ02 LINK AQ0 V0 I0 M V V 模拟量输出 模拟量输出	
Terminal Definition		Terminal Definition		Terminal Definition	
● null	3: No.4Road input	AQ0Analog input Exit passage1	V0:aisle1Analog voltage output	AQ0Analog quantity	V0:aisle1Analog voltage output
0: No.1Road input	4: No.5Road input		I0:aisle1Analog current output	Output Channel1	I0:aisle1Analog current output
1: No.2Road input	5: No.6Road input		MAnalog output common terminal		MAnalog output common terminal
2: No.3Road input	MPublic terminal	Register mapping:QW600		AQ1Analog quantity	V1:aisle2Analog voltage output
DIP switch settings		Note Log output supports simultaneous voltage and current output. Distinguish by the terminal blocks.		Output Channel2	I1:aisle2Analog current output
ON 1 2 3 4 5 6 I V Note: Supports voltage or current. Input via the back dial Switch selection. Each road Code corresponds to aisle, ON For current, OFFFor electric pressure.				MAnalog output common terminal	
Register mapping:IW600,IW602,IW604,IW606,IW608,IW610				Register mapping:QW600,QW602	
				Note Log output supports simultaneous voltage and current output. Distinguish by the terminal blocks.	

SB AQ04Wiring diagram	Terminal Definition	SB AM06Wiring diagram	Terminal Definition	
 模拟量输出	● null	 模拟量输入 模拟量输出	AIAnalog input	0: No.1road
	0Analog output1aisle			1: No.2road
	1Analog output2aisle			2: No.3road
	MAnalog output common terminal			3: No.4road
Note:SB AQ04External connection required24V powered by; Register mapping:QW600,QW602,QW604,QW606	2Analog output3aisle	Register mapping:IW600,IW602,IW604,IW606,QW600,QW602	AAnalog output	0: No.1road
	3Analog output4aisle			1: No.2road
	L+:powered by24VPower positive			● null
	M:powered by24VPower supply negative			MPublic terminal
SB AQ04DIP switch	DIP switch definition	SB AM06DIP switch	DIP switch definition	
 ON OFF	1:ON,2:OFFaisle1Output voltage	 ON OFF	1:aisle1Analog input terminal,ON: Electric current;OFF:Voltage	
	1:OFF,2:ONaisle1Output current		2:aisle2Analog input terminal,ON: Electric current;OFF:Voltage	
	3:ON,4:OFFaisle2Output voltage		3:aisle3Analog input terminal,ON: Electric current;OFF:Voltage	
	3:OFF,4:ONaisle2Output current		4:aisle4Analog input terminal,ON: Electric current;OFF:Voltage	
	5:OFF,6:ONaisle3Output current		5:ON,6:OFFOutput1Channel voltage	
	5:ON,6:OFFaisle3Output voltage		5:OFF,6:ONOutput1Channel current	
	7:ON,8:OFFaisle4Output voltage		7:ON,8:OFFOutput2Channel voltage	
	7:OFF,8:ONaisle4Output current		7:OFF,8:ONOutput2Channel current	

SB AM03Wiring diagram	SB AM04Wiring diagram	SB AM05Wiring diagram	SB AT04Wiring diagram
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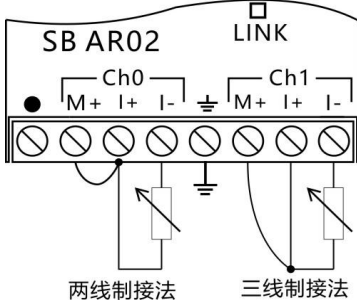
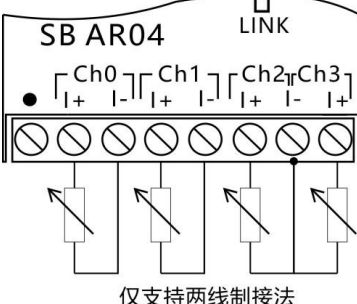
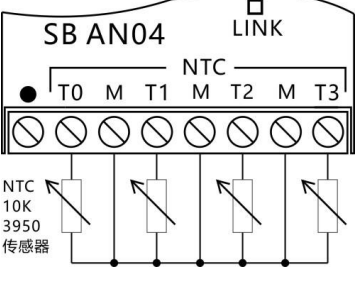
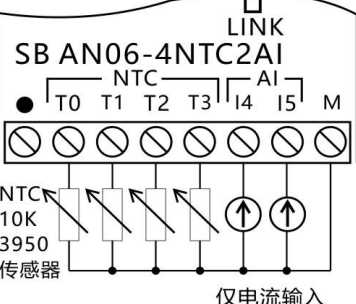
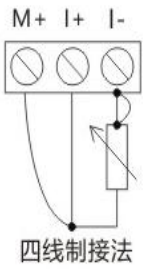
SB AM03 LINK AI AQ M V0 I0 V1 I1 Va Ia

SB AR02Wiring diagram

SB AR04Wiring diagram

SB AN04Wiring diagram

SB AN06Wiring diagram

									
Terminal Definition		Terminal Definition		Terminal Definition		Terminal Definition			
● null	Ground: Shielding	● null		● null		● null			
Ch0 No.1aisle	M+Line resistance compensation	Ch0No.1aisle	I+:PT100end	T0: No.1road	NTC: temperature collection aisle	T0:1Road temperature acquisition			
	I+:PT100end		I-:PT100end	T1:2Road temperature acquisition					
	I-:PT100end	Ch1No.2aisle	I+:PT100end	T2: No.3road		T2:3Road temperature acquisition			
M+Line resistance compensation	I-:PT100end		T3:4Road temperature acquisition						
Ch1 No.2aisle	I+:PT100end	Ch2No.3aisle	I+:PT100end	MPublic terminal	AI:mold Analogous Input	I4: No.1analog input			
	I-:PT100end		I-:3,4aisle			I5: No.2analog input			
	Four-wire system Connection method		Ch3No.4aisle	PT100Public terminal	Register mapping: IW600, IW602, IW604, IW606			M: Common terminal for all channels	
I+:PT100end									
Register mapping: IW600, IW602, IW604, IW606									
Register mapping: IW600, IW602							Register mapping: IW600, IW602, IW604, IW606, IW608, IW610		

Special Note: The signal board DIP switch has a high-temperature film on its surface. You can puncture it with a sharp tool (such as tweezers) and then gently move it. During the pre-shipment debugging, the DIP switches may be switched, and it is normal for the high-temperature film to be punctured or lost.

4.6 Frequently Asked Questions

4.6.1 Does it support Smart V3 version PLCs? Does it support the simultaneous installation of two signal boards?

A: The firmware version has been fully updated to [version number].V30It supports installing two at the same time. The version number is located on the top front of the signal board housing, for example... GB-H4A/U703V31, at last3The bit indicates the version number.

4.6.2 Why are some digital signal boards and analog signal boards configured as SB CM01?

A: This special configuration is used to achieve resource mapping.

4.6.5 When the non-standard signal board is configured as SB CM01 and installed in slot SB0, must address 2 be selected? When installed in slot SB1, must address 3 be selected?

A: It's not necessary, just install it.SB0Slot number and address can also be selected.3The address mapped to this signal board is...I616andQ616 In short, the addresses of the two slots can only be set.2or3The key to determining where the mapped address starts is the address number, not the slot number.

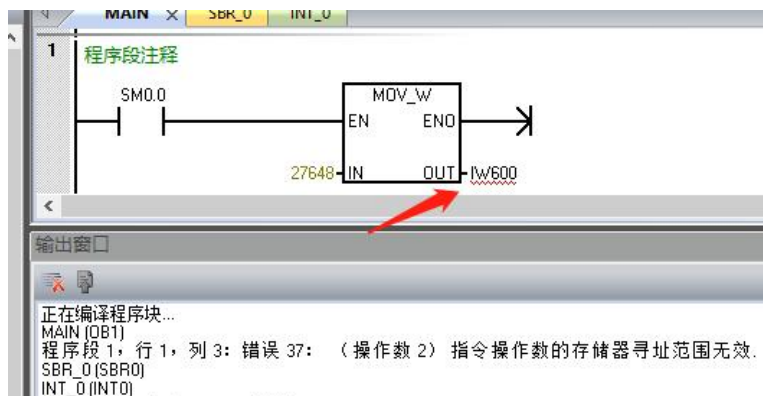
4.6.6 When the signal board is plugged in, the LINK indicator light does not illuminate.

answer:LINKThe indicator light is used to indicate normal communication. It will only be active if the configuration is correct and the system block is downloaded.PLCIt will stay on continuously after that. If it goes out, it indicates a setting error or device malfunction.

4.6.7 The configuration is correct and the system block has been downloaded, but the LINK indicator light is still not on. A: Check if the program will...PORT1orPORT2Initialize tomobusIf so, delete that part of the program.

4.6.8 Can the analog signal channels directly read the AIW and AQW registers? A: No, it's remapping to...IW,QWThe area is now accessible; you can read and write directly. For queries, please refer to section [number missing].4Section content.

4.6.9 The IW600 or QW600 programming interface registers have red underlines, and compilation will fail as shown in the figure below.

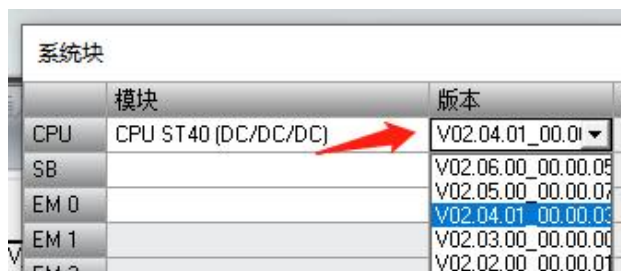


There are three possibilities. Possibility one: It's due to an outdated software version; it must be...2.04Or above. The method for viewing is as follows:



The picture is2.05Version, meets requirements.

Possibility 2: Configuration interfacePLCThe selected host version is too low; it must be [version number].2.04Or above. The method for viewing is as follows:



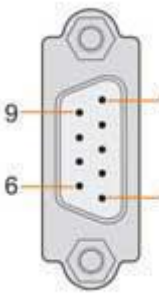
Possibility 3:PLCThe firmware version is too low, it must also be2.04For versions 1 and above, the method to check is as follows; the image below shows the firmware version number.V2.03Therefore, an upgrade is needed.PLCFirmware upgrade method consultationPLCMain unit manufacturer.



5.485Communication interface definition

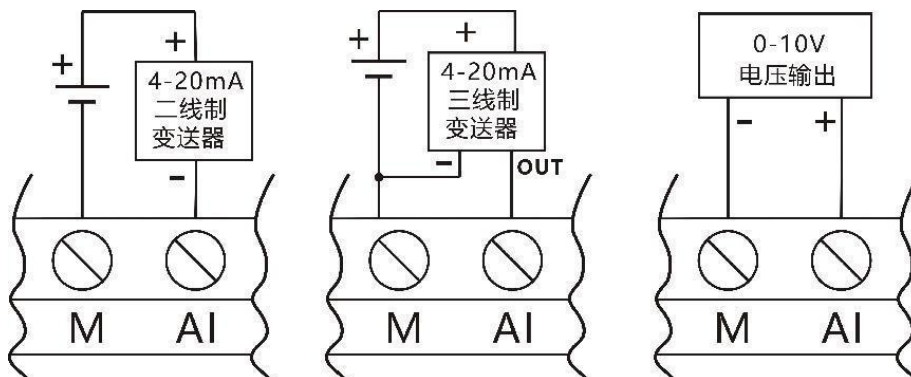
The Gongbei compact/standard Smart host comes with one built-in 485 interface, supporting PPI communication, Modbus 485 communication, and freeport

communication. The pin definitions for this interface are shown in the following diagram:

connector	Pin number	PORT0
	1	chassis grounding
	2	+24V ground
	3	RS485 signal A
	4	Send request RTS
	5	+5V ground
	6	+5V
	7	+24V
	8	RS485 signal B
	9	NC
	Connector housing	chassis grounding

Note: Signals A and B as defined in the table are Defined according to the 485 standard.

6.Analog input wiring diagram



Note: In the diagram above, AI represents the analog input channel of the host, expansion module, or signal board. Whether it is a voltage input channel or a current input channel varies from product to product. Some products require configuration selection in the system block, some are switched by DIP switches, and some are distinguished by terminal blocks. Please refer to the relevant section for details.

7. Transistor output internal diagram