

UN 200 Series Small PLC

1. Overview

UN 200 series small PLC is suitable for many industries, and satisfy the control requirement of medium and small scale system, cover the relevant auto-inspection, automation control industry and civil field. Products have a perfect performance, rich instruction set, good expansion and high cost-efficient.




UN 280 series are new generation high performance PLC, strong communication, high speed, and can customize special controllers according to different requirements, It uses 200 series expansion modules and accessories.

2. General Technical Specification

UN 200 series PLC general technical specification

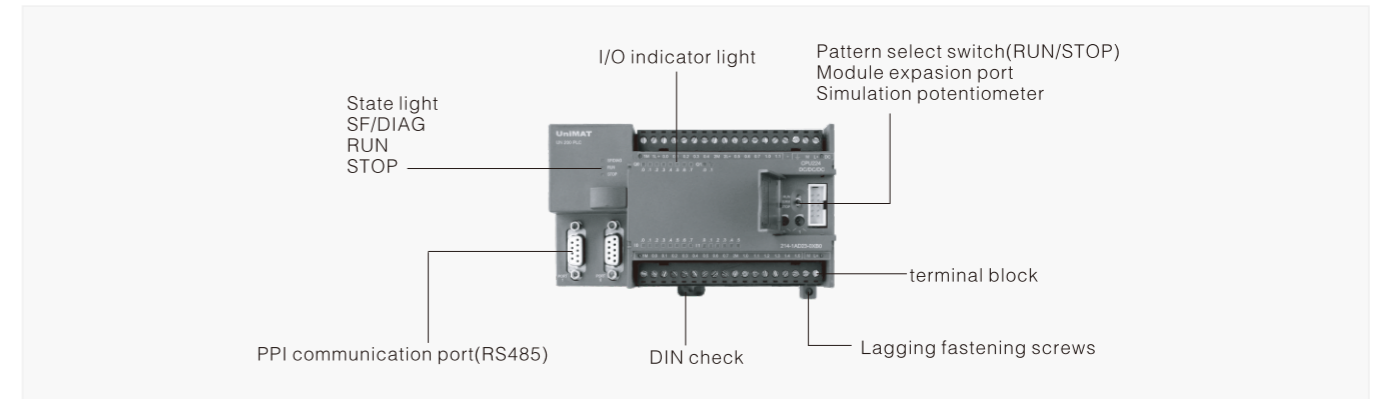
Protection Grade	IP20, accord with IEC 60529	
Environment Temperature	Horizontal installation	0°C ~ 60°C
	Vertical installation	0°C ~ 40°C
Relative humidity	5% ~ 95%, non condensing (RH Grade2, accord with IEC61131-2)	
Atmosphere	795~1080hpa	
Isolation	24V DC	Test voltage 500V DC
	230V AC	Test voltage 1460V AC
Electromagnetic compatibility	Accord with EMC regulations requirements Noise suppression, accord with IEC 61000-6-2 Testing accord with: IEC 61000-4-2, 61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC 61000-4-6	
Mechanical grad vibration, testing condition is accord with	IEC 60068, Part2-6/10 μp58Hz; Constant amplitude 0.075mm; 58~150Hz; constant accelerated speed 1g; Vibration period: in every direction of three mutually orthogonal axis, every axis is 10 vibration period.	

UN 200 series CPU module

CPU 224	CPU 226	CPU 224XP
 <ul style="list-style-type: none"> High-speed computing and data processing Local Digital 14DI/10DO Communication ports: 2RS485, both support PPI Protocol Expansion Modules Max. allowed: 7 I/O Modules Supports 256 digital and 64 analog Larger user storage: program storage: 20k, user data storage: 10k Built-in simple and flexible PID subfunction, so more convenient for users to realize the multi channels PID control. Apply FLASH's long-time data-holding on poweroff, no need of power supply, can save data for 10 years Unique AES Iterative encryption algorithm, which protects clients' intellectual property. 	 <ul style="list-style-type: none"> High-speed computing and data processing Local Digital 24DI/16DO Communication ports: two RS485, both support PPI Protocol Expansion Modules Max. allowed: 7 I/O Modules Support 256 digital and 64 analog Larger user storage: program storage: 20k, user data storage: 10k Built-in simple and flexible PID subfunction, so it more convenient for users to realize the multi channels PID control. Apply FLASH's long-time data-holding on poweroff, no need of power supply, can save data for 10 years Unique AES Iterative encryption algorithm, which protects clients' intellectual property. 	 <ul style="list-style-type: none"> High-speed computing and data processing Local Digital 14DI/10DO, Analog 2AI/1AO Communication ports: two RS485, both support PPI Protocol Expansion Modules Max. allowed: 7 I/O Modules Support 256 digital and 64 analog Larger user storage: program storage: 20k, user data storage: 20k Built-in simple and flexible PID subfunction, so it more convenient for users to realize the multi channels PID control. Apply FLASH's long-time data-holding on poweroff, no need of power supply, can save data for 10 years Unique AES Iterative encryption algorithm, which protects clients' intellectual property.

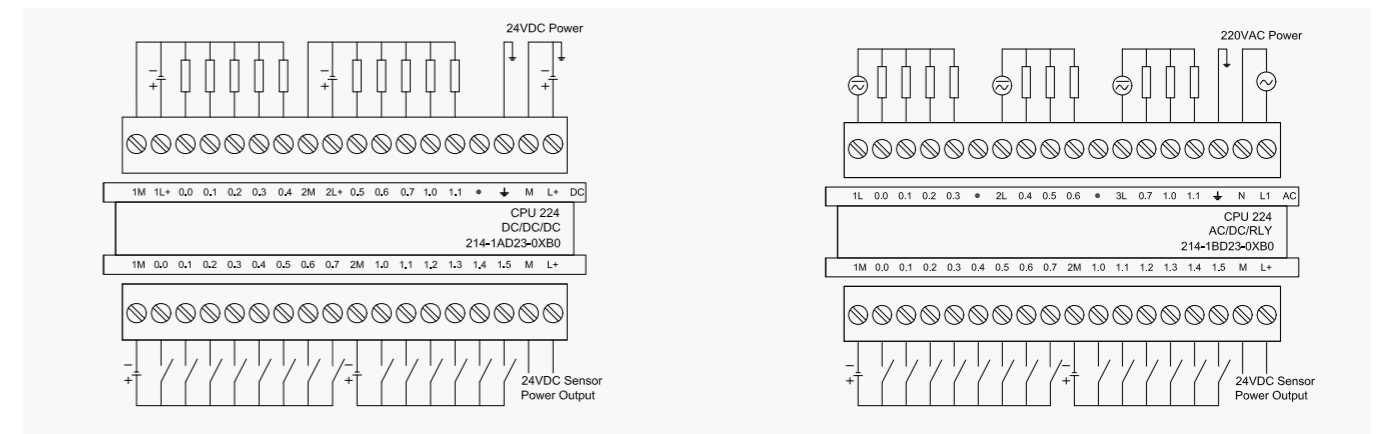
CPU224

CPU224 Structure



CPU224 structure (Picture 1)

Module Expansion port

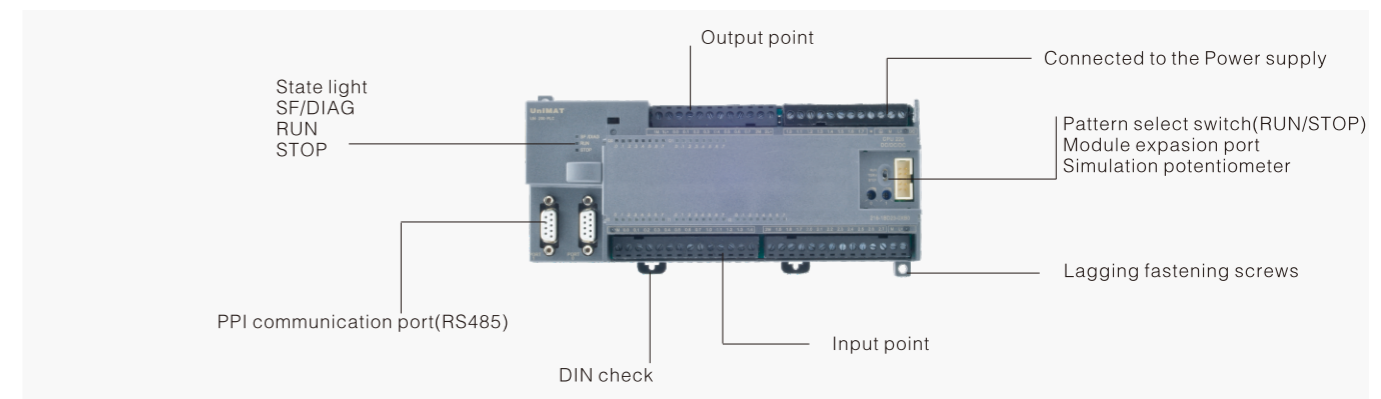


CPU224 DC/DC/DC (Picture 2)

CPU224 AC/DC/RLY (Picture 3)

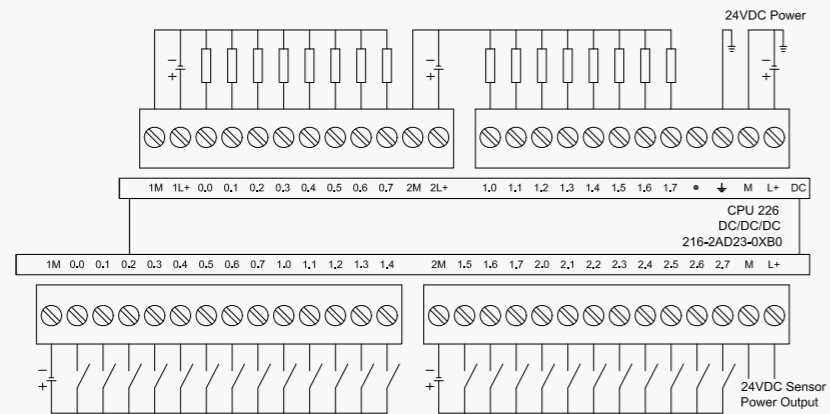
CPU226

CPU226 Structure

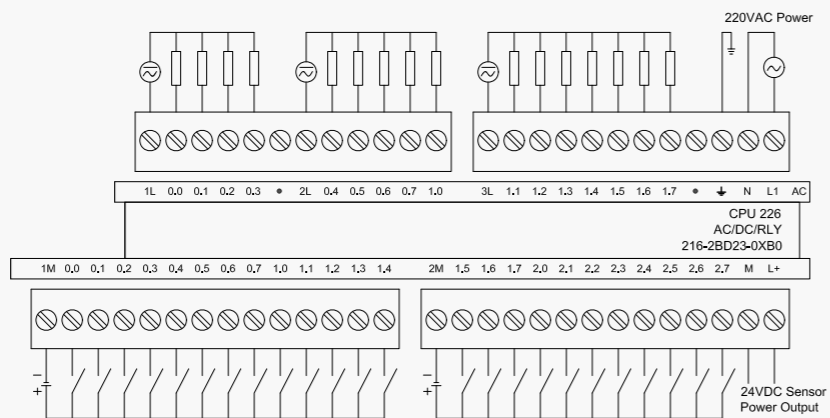


CPU226 structure (Picture 4)

Module Expansion port



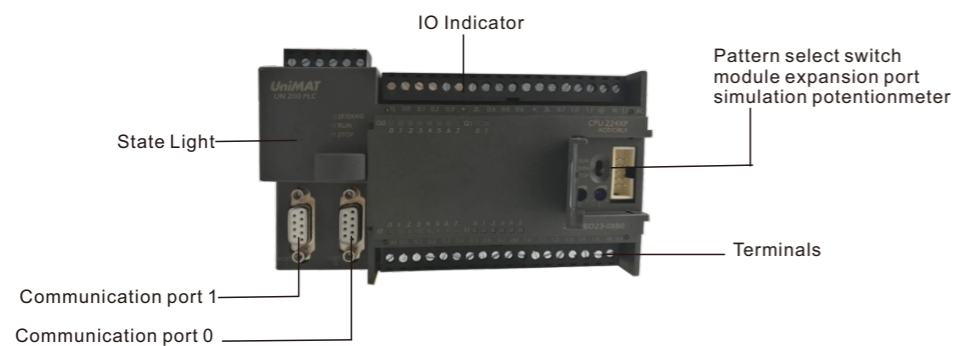
CPU226 DC/DC/DC (Picture 5)



CPU226 AC/DC/RLY (Picture 6)

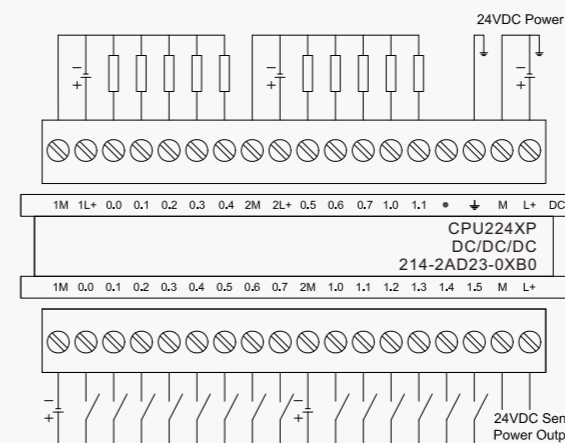
CPU224XP

CPU 224XP Structure

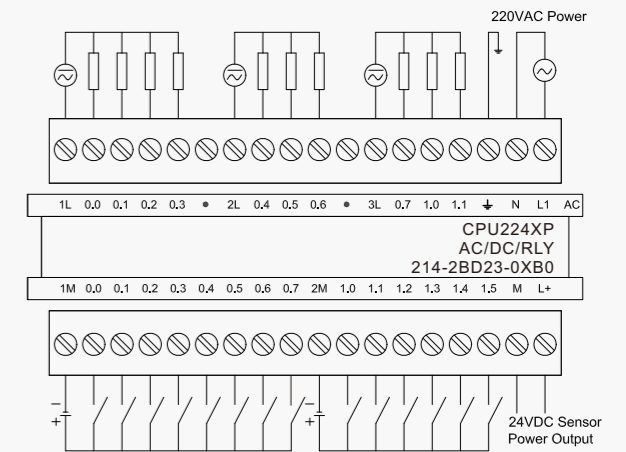


CPU224XP structure(Picture:7)

Module Expansion port



CPU224XP DC/DC/DC



CPU224XP AC/DC/RLY

CPU224, CPU226 Specification

- CPU224 DC/DC/DC wiring diagram is shown as picture 2, CPU226 DC/DC/DC wiring diagram is shown as picture 5. The two CPUs are 24 VDC power supply, please shut off the power when connecting.
- CPU224 AC/DC/RLY wiring diagram is shown as picture 3, CPU226 AC/DC/RLY wiring diagram is shown as picture 6. The two CPUs are 120/240 V AC power supply. You must shut off the power when connecting.
- The using of PPI adapter or CP 5611 PPI port is connectrd as picture 1, picture 4 or picture 7
- If you install an external extension module, please connect extension module on port of picture 1, picture 4 or picture 7, A UN200 CPU can connect up to seven extension modules.
- Install STEP 7 MicroWIN software and open, double-click the communication options, click refresh to find information on the CPU. If UN200 CPU connects external extension modules, double click on the icon of CPU ,then you can see information of the extension modules.

Specifications

Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU224XP-2R
Power consume	7W	10W	11W	17W	7W	17W
Memory						
Program memory		20K		24K		20K
Data Memory		10K(can hold data for 10 years on power down)				20K
I/O Characteristics						
Digital input		14DI		24DI		14DI
Digital output		10DO		16DO		10DO
Digital I/O Image size		256 (128DI/128DO)				
Analog I/O Image size		64 (32AI/32AO)				



Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU224XP-2R
I/O Characteristics						
Max.expansio modules allowed	7					
Pulse catch input	14		24		14	
Total number of high-speed counter	6					
Single phase counter	6, each 30KHz			6,30K(4),200K(2),10.3~10.5are200KHz 10.0~10.2 and 10.6~11.5 are 30KHz		
Two phase counter	4, each 20KHz			4,20K(3),100K(1)		
Pulse outputs	two 30KHz (only DC output)	-	two 30KHz (only DC output)	-	two 30KHz (only DC output)	-
Characteristic						
Timers	256 total timers 4timers 1ms, 16 timers 10ms, 236 timers 100ms					
Counters	256(backed by super capacitor or battery)					
Internal memory bits stored on power down	256					
Timed interrupts	Two with 1ms resolution					
Edge interrupts	4 up /4 down					
Analog adjustment	2 with 8 bit resolution					
Reatime clock	Built-in					
Integration Communication function						
Communication port	2 RS485 standard PPI communication ports					
PPI baud rate(kbps)	9.6k, 19.2k, 187.5kbps					
Freeport baud rates	1.2k-115.2kbaud					
Max.cable length per segment	Using isolated potentiometer, 187.5kbps can be 1000meters,38.4kbps can be 1200meters Non-using isolated potentiometer, then 50meters					
Max.number of masters	32					
Max.number of stations	32 per segment, 126 per network					
Peer to Peer (PPI Master mode)	Yes					
Power Characteristics						
Input voltage	20.4-28.8 VDC	85-264V AC (47-63Hz)	20.4-28.8 VDC	85-264V AC (47-63Hz)	20.4-28.8 VDC	85-264V AC (47-63Hz)
Input Current	110mA (only CUP, 24V DC)	60/30mA (only CPU, 120/240V AC)	110mA (only CPU, 24V DC)	60/30mA (only CPU, 120/240V AC)	110mA (only CPU, 24V DC)	60/30mA (only CPU, 120/240V AC)
Input Current	700mA (Max. Load, 24V DC)	200/100mA (Max. Load, 120/240V AC)	1050mA (Max. Load, 24V DC)	200/100mA (Max. Load, 120/240V AC)	700mA (Max. Load, 24V DC)	200/100mA (Max. Load, 120/240V AC)
Surge current	12A at 28.8 V DC	20A at 264V AC	12A at 28.8 V DC	20A at 264V AC	12A at 28.8 V DC	20A at 264V AC

Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU224XP-2R
Power Characteristics						
Isolation (field to logic)	Not isolated	1500V AC	Not isolated	1500V AC	Not isolated	1500V AC
Sensor voltage	L+ minus 5V	20.4-28.8V DC	L+ minus 5V	20.4-28.8V DC	L+ minus 5V	20.4-28.8V DC
Current limit	1.5 A Peak					
Ripple Noise	From input power supply	Less than 1V peak-to-peak	From input power supply	Less than 1V peak-to-peak	From input power supply	Less than 1V peak-to-peak
Isolation(sensor and logic)	No isolation					
Digital input characteristics						
Integration Digital Inputs	14		24		14	
Input type	PNP/NPN					
Rated voltage	24 VDC 4mA					
Max. Continuous permissible voltage	30 VDC					
Surge voltage	35 VDC 0.5s					
Logic "1" voltage range	15 V~30V DC				15VDC 2.5mA(10.0~10.2 and 10.6~11.5) 4VDC 8mA(10.3~10.5)	
Logic "0" voltage range	0~5V DC				5VDC 1mA(10.0~10.2 and 10.6~11.5) 1VDC 1mA(10.3~10.5)	
Input delay	Optional (0.2-12.8ms)					
Connection of 2-wire proximity switch sensor (Bero) Permissible leakage current (Max.)	1mA					
Isolation						
Isolation field to Logic	Yes					
Optical(gawanic)	500 V AC for 1 minute					
Groups	see wiring diagram					
High-speed Counter						
High- speed Counter input rate Logic1= 15-30V DC	20KHz(single phase), 10KHz (two phase)					
High- speed Counter input rate Logic 1 = 15-26V DC	30KHz(singlephase), 20KHz (twophase)					

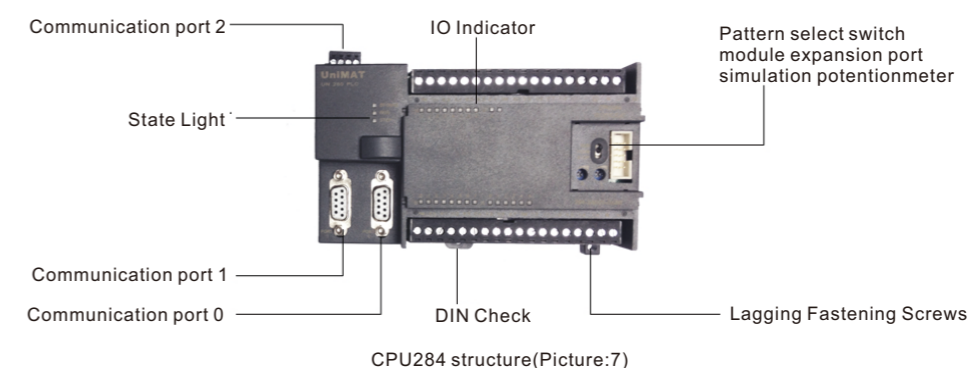
Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU224XP-2R
Digital input characteristics						
Inputs on simultaneously	all					
Cable length (Max.)	500meters (standard input)					
Shielded	50 meters (High speed counter input)					
Unshielded	300 meters (standard input)					
Digital output standard						
Integration digital outputs	10		16		10	
Type	Solid state -MOSFET (PNP)	Dry contact	Solid state -MOSFET (PNP)	Dry contact	Solid state -MOSFET (PNP)	Dry contact
Rated voltage	24V DC	24V DC or 250V AC	24V DC	24V DC or 250V AC	24 V DC	24 V DC or 250 V AC
Voltage range	20.4-28.8 V DC	5-30V DC,/ 5-250V AC	20.4-28.8 V DC	5-30V DC,/ 5-250V AC	5-28.8 V DC(Q0.0-Q0.4) 20.4-28.8VDC(Q0.5-Q1.1)	5-30V DC, 5-250V AC
Surge current (Max.)	8 A,100ms	5 A,4s at 10% work ratio	8 A,100ms	5 A,4s at 10% work ratio	8 A,100ms	5 A,4s at 10% work ratio
Logic 1 (Min.)	20V DC(Max. Current)	-	20V DC(Max. Current)	-	L+ minus 0.4V(Max. Current)	-
Logic 0 (Max.)	0.1V DC 10KΩ load	-	0.1V DC 10KΩ load	-	0.1V DC 10KΩ load	-
Rated current per point (Max.)	0.75A	2A	0.75A	2A	0.75A	2A
Rated current per common(Max.)	6A	10A	6A	10A	6A	10A
Leakage current (Max.)	10μA	-	10μA	-	10μA	-
Lamp load (Max.)	5W	30W DC, 200W AC	5W	30W DC, 200W AC	5W	30W DC, 200W AC
Inductive clamp voltage	L+minus 48 VDC, 1W power dissipation	-	L+minus 48 VDC, 1W power dissipation	-	L+minus 48 VDC, 1W power dissipation	-
On state resistance (contact)	0.3 Ω Typical (0.6Ω max.)	0.2 Ω (max. When new)	0.3 Ω Typical (0.6Ω max.)	0.2 Ω (max. When new)	0.3 Ω Typical (0.6Ω max.)	0.2 Ω (max. When new)
Isolation						
Optical galvanic (field to logic)	500VAC for 1min.	-	500VAC for 1min.	-	500VAC for 1min.	-
Logic to contact	-	500VAC for 1min.	-	500VAC for 1min.	-	500VAC for 1min.

Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU 224XP -2R
Digital output standard						
Isolation						
Resistance (logic to contact)	-	100mΩ	-	100mΩ	-	100mΩ
Isolation groups	See wiring diagram					
Off to on	2μs (Q0.0, Q0.1), 15μs (other)	-	2μs (Q0.0, Q0.1), 15μs (other)	-	2μs (Q0.0, Q0.1), 15μs (other)	-
On to off	10μs (Q0.0, Q0.1), 130μs (other)	-	10μs (Q0.0, Q0.1), 130μs (other)	-	10μs (Q0.0, Q0.1), 130μs (other)	-
Switching	-	10ms	-	10ms	-	10ms
Pulse frequency (Max.)	20kHz (Q0.0 and Q0.1)	1Hz	20kHz (Q0.0 and Q0.1)	1Hz	100kHz (Q0.0 and Q0.1)	1Hz
Mechanical life cycle	-	10,000,000 (non load)	-	10,000,000 (non load)	-	10,000,000 (non load)
Contact lifetime	-	100,000 (Rated load)	-	100,000 (Rated load)	-	100,000 (Rated load)
Outputs of simultaneously connect	All output at 60°C (Horizontal) All output at 50°C (Vertical)					
Connecting two outputs in parallel	Yes, only outputs in same group	no	Yes, only outputs in same group	no	Yes, only outputs in same group	no
Shielded	500m					
Unshielded	150m					
Analog input characteristics						
Integrated analog input points						2 inputs
Analog input bytes						single-ended
Voltage range						±10V
Data word format, full-scale						-32000~+32000
DC input						>100KΩ
Max input voltage						30VDC
Resolution						11 bits
LSB value						4.88mV
Isolation						None
Accuracy						±2.5%full-scale(worst loditions 0-55degree) ±1.0%full-scale(typical 25degree)
Repeativity						±0.05%full-scale

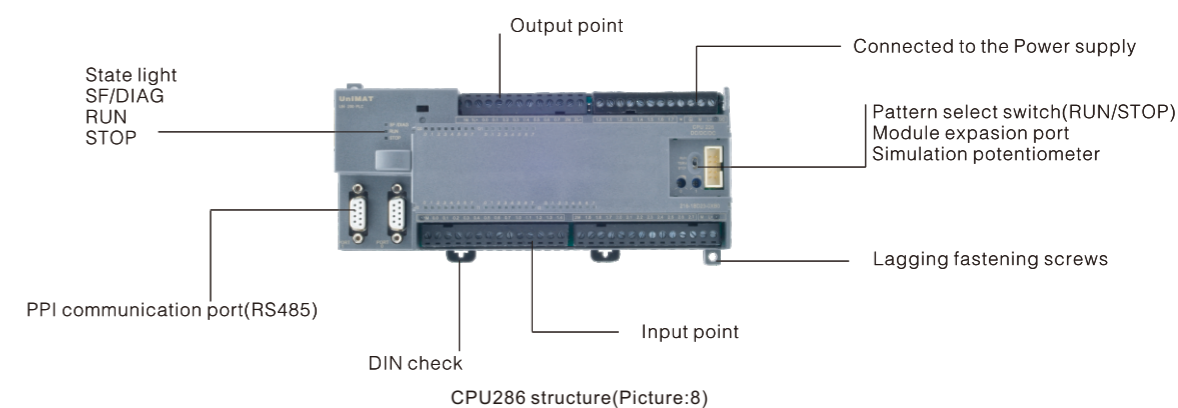
Model	CPU 224-2Q	CPU 224-2R	CPU 226-2Q	CPU 226-2R	CPU 224XP -2Q	CPU224XP-2R
Analog to digital conversion time	-	-	-	-	125ms	
Change bit	-	-	-	-	SAR	
Step response	-	-	-	-	max 250ms	
Noise restrain	-	-	-	-	typical-40dB@50Hz	
Analog output characteristics						
Integrated AO	-	-	-	-	1 output	
Signal range	-	-	-	-	voltage 0-10V current 0-20mA	
Data word format,full-scale	-	-	-	-	0~32000	
Resolution	-	-	-	-	12bits	
LSB value	-	-	-	-	voltage 0-10V current 0-20mA	
Isolation	-	-	-	-	None	
Accuracy	-	-	-	-	worst condition voltage output $\pm 2\%$ full scale current output $\pm 3\%$ full scale typical condition voltage output $\pm 1\%$ full scale current output $\pm 1\%$ full scale	
Build time	-	-	-	-	voltage output 50us current output 100us	
Max output drive	-	-	-	-	voltage output min $\geq 5000\Omega$ current output max $\leq 500\Omega$	
Environment parameter						
Working temperature	-	-	-	-	0°C~60°C(horizontal installation), 0°C~40°C(horizontal installation)	
Transportation temperature	-	-	-	-	-20°C~80°C	
Relative humidity	-	-	-	-	5~95%, no condensation(RH grade,comform to the IEC61131-2)	
Electromagnetic compatibility	-	-	-	-	meet EMC requirement noise rejected,meet the IEC61000-6-2 test meet the IEC61000-4-2, IEC61000-4-3,IEC61000-4-4, IEC61000-4-5,IEC61000-4-6	
Mechanical grade	-	-	-	-	IEC60068,Part2-6/10up58Hz constant amplitude0.075mm; 58~150Hz;constant acceleration1g; vibration period:every axis has 10pcs vibration period on each direction of three mutually vertical axis	
IP grade	-	-	-	-	IP20	
Order number	UN214-1AD23-0XB0	UN214-1BD23-0XB0	UN216-2AD23-0XB0	UN216-2BD23-0XB0	UN214-2AD23-0XB0	UN214-2BD23-0XB0

CPU284	CPU286
 <ul style="list-style-type: none"> High-speed computing and data processing Local Digital 14DI/10DO Communication ports: three RS485, support PPI Master. Expansion Modules Max. allowed: 7 I/O Modules Supports 256 digital and 64 analog Larger user storage: program storage: 20k, User data storage: 10k Built-in simple and flexible PID subfunction, so it more convenient for users to realize the multi channels PID control. Apply FLASH's long-time data-holding on power-off, no need of power supply, can save data for 10 years Unique AES Iterative encryption algorithm, which protects clients' intellectual property. 	 <ul style="list-style-type: none"> With 4 axis motion control High-speed computing and data processing Local Digital 24DI/16DO Communication ports: two RS485, support PPI Master. Expansion Modules Max. allowed: 7 I/O Modules Supports 256 digital and 64 analog Larger user storage: program storage: 24k, User data storage: 10k Built-in simple and flexible PID subfunction, so it more convenient for users to realize the multi channels PID control. Apply FLASH's long-time data-holding on power-off, no need of power supply, can save data for 10 years Unique AES Iterative encryption algorithm, which protects clients' intellectual property.

CPU 284 Structure

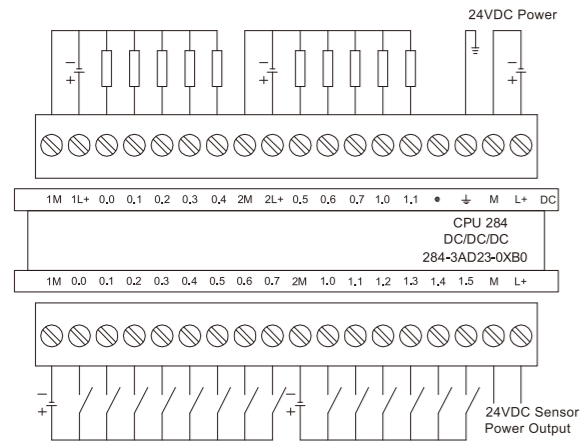


CPU286 Structure

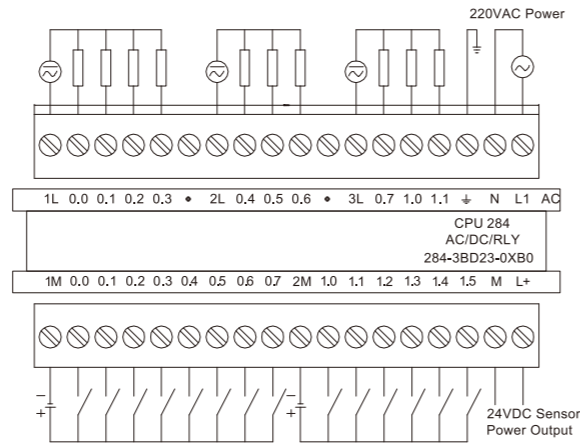


Technical Parameters

Module Expansion port



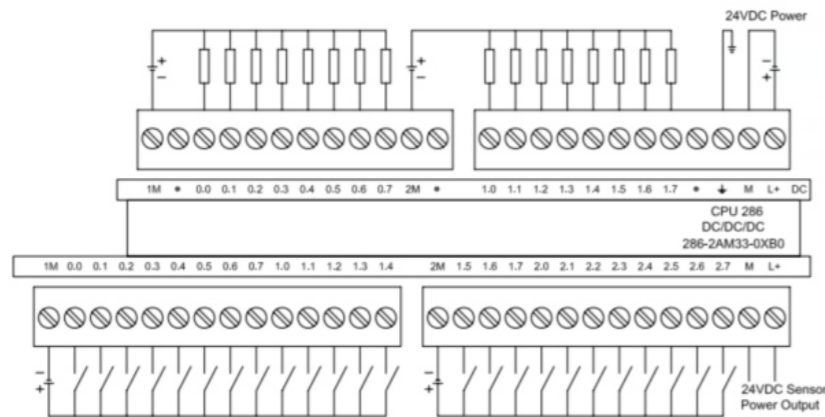
UN284-3AD23-0XB0 Wiring Diagram(picture:9)



UN284-3BD23-0XB0 Wiring Diagram(picture:10)

Function	Function Name, Identifier	Description
3 Serial port	Port 0	PPI 0
	Port 1	PPI 1/ Free port 1
	Port 2(terminal)	Free port 0

Module Expansion Port



UN286-2AM23-0XB0 Wiring Diagram(picture:11)

CPU284, CPU286 Specification



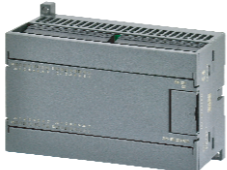
- CPU284 DC/DC/DC wiring diagram is shown as picture 9. CPU286 wiring diagram is shown as picture 11, The two CPUs are 24 VDC power supply, please shut off the power when connecting.
- CPU284 AC/DC/RLY wiring diagram is shown as picture 10. The CPU is 120/240 V AC power supply. You must shut off the power when connecting.
- The using of PPI adapter or CP 5611 PPI port is connectrd as picture 7.
- If you install an external extension module, please connect extension module on port of picture 7, A UN200 CPU can connect up to seven extension modules.
- Install STEP 7 MicroWIN software and open, double-click the communication options, click refresh to find information on the CPU. If UN200 CPU connects external extension modules, double click on the icon of CPU, then you can see information of the extension modules.

Model	CPU 284-3Q	CPU 284-3R	CPU 286-2Q
Power consume	7W	10W	12W
Memory			
Program memory	20K		24K
Data Memory	10K(can hold data for 10 years on power down)		
I/O Characteristics			
Max.expansion modules allowed	7		
Total number of high-speed counter	6		
Single phase counter	6,each 30K		6,each 200K
Two phase counter	4,each 20K		4,each 100K
Pulse outputs	Two 30KHz(only DC output)	-	4 axis 200KHz
Characteristic			
Timers	256total timers,4timers 1ms,16timers 10ms,236timers 100ms		
Counters	256		
Internal memory bits stored on power down	256		
Timed interrupts	Two with 1ms resolution		
Edge interrupts	4 UP/4 down		
Analog adjustment	2 with 8bit resolution		
Realtime clock	built-in		
Integration communication function			
Communication port	3 RS485 standard PPI communication ports		2 RS485 standard PPI communication ports
PPI baud rate	9.6,19.2,187.5kbps		9.6,19.2kbps
Freeport baud rate	1.2k-115.2kbps		
Max.cable length per segment	Using isolated potentiometer, 187.5kbps can be 1000meters,38.4kbps can be 1200meters Non-using isolated potentiometer, then 50meters		
Input voltage	20.4-28.8V DC	85-264V AC(47-63Hz)	20.4-28.8V DC
Input current	110mA(only CPU,24VDC)	60/30mA(only CPU,120/240VAC)	150mA(only CPU,24VDC)
Digital input/output characteristics			
Integration DI	14		24
Input type	PNP/NPN		
Rated voltage	24VDC,4mA typical		
Logic"1"voltage range	15~30VDC		
Logic"0"voltage range	0~5VDC		
Permissible leakage current(Max.)	1mA		
Integration DO	10		16
Output type	Solid state-MOSFET(PNP)	Dry contact	Solid state-MOSFET(PNP)
Rated voltage	24VDC	24VDC or 250VAC	24VDC
Voltage range	20.4-28.8VDC	5-30VDC or 5-250VAC	5-28.8VDC
Surge current(Max.)	8A,100ms	5A,4s at 10% work ratio	8A,100ms
Logic 1(Min.)	20VDC,Max.current	-	0.5V
Logic 0(Max.)	0.1VDC,10KΩload	-	VCC minus0.5V
Rated current per point(Max.)	0.75A	2.0A	0.5A
Rated current per common(Max.)	6A	10A	4A
Lamp load(Max.)	5W	30WDC,200WAC	3.5W
Pulse frequency(Max.)	20KHz(Q0.0,Q0.1)	1Hz	4 axis:200KHz(Q0.0~Q0.7),1KHz(Other)
Contact life time	-	100000(Rated load)	-
Dimension(WxHxD)	140x80x62		196x80x62
Order number	UN 284-3AD23-0XB0	UN 284-3BD23-0XB0	UN 286-2AM23-0XB0

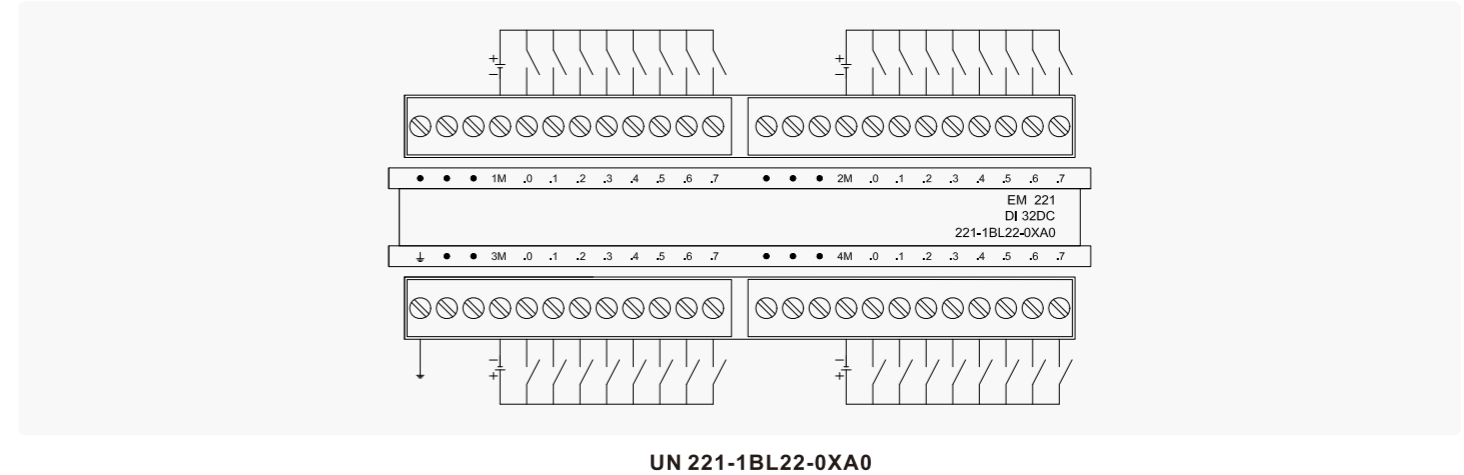
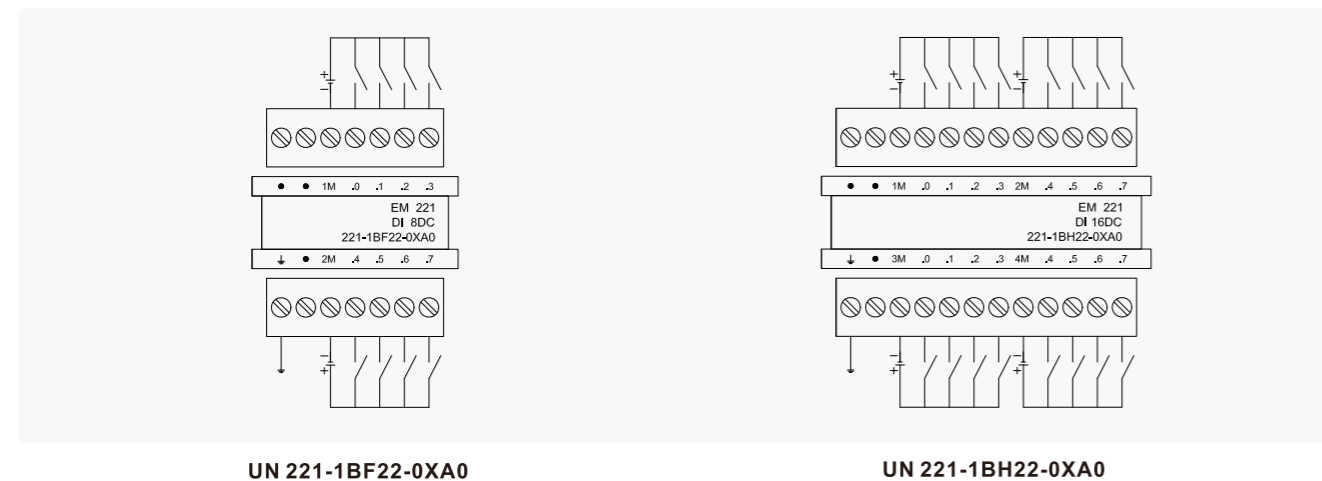
UN200 Digital Module

UN 200 DI Modules

Specifications:

Model	EM 221 8 inputs	EM 221 16 inputs	EM 221 32 inputs
Product Picture			
Product Description	8DI, 24VDC; Optical isolation with high immunity	16DI, 24VDC; Optical isolation with high immunity	32DI, 24VDC; Optical isolation with high immunity high density input module can strengn expansion capability cost effective
From bus current consumption	40mA	85mA	140mA
Total power consumption	2W	3W	5.2 W
Number of digital inputs	8	16	32
Input type	PNP/NPN		
Rated voltage	24V DC 4mA		
Maximum continuous permissible voltage	30V DC		
Surge voltage(max.)	35V DC for ,0.5s		
Logic 0	0~5 V DC		
Logic 1	15~30V DC		
Input delay(max)	4.5ms		
Optical isolation (Field to Logic)	500V AC,1 minute		
Premissible max leakage current(Bero)	1mA		
Cable Length	Shielded	500m	
	Unshielded	300m	
Dimension (W x H x D)	46 x 80 x 62 mm	71.2 x 80 x 62 mm	137.5 x 80 x 62 mm
Order Number	UN 221-1BF22-0XA0	UN 221-1BH22-0XA0	UN 221-1BL22-0XA0

Wiring Diagram

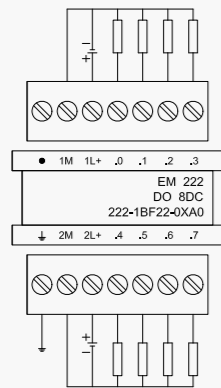


UN 200 DO Modules

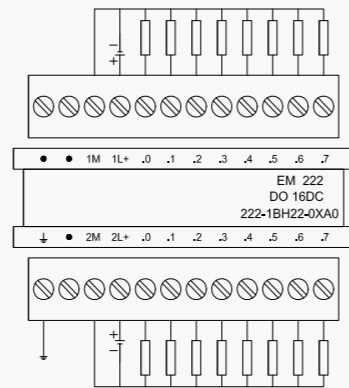
Specifications:

Model	EM 222 8 outputs Transistor	EM 222 8 outputs Relay	EM 222 16 outputs Transistor	EM 222 16 outputs Relay	EM 222 32 outputs Transistor
Product Picture					
Product Description	8DO,24V DC; Transistor output; Optical isolation with high immunity, stable	8DO,24V DC/250V AC Relay output; high immunity, stable	16DO,24V DC; Transistor output; Optical isolation with high immunity, stable	16DO,24V DC/250V AC Relay output; high immunity	32DO,24V DC; Transistor output; Optical isolation with high immunity high density output module can strengthen expansion capability
From bus consumption current consumption	65mA	60mA	110mA	98mA	140mA
Total power consumption	2W	3W	3W	3W	5.2W
Digital output	8	8	16	16	32
Output type	Transistor	Relay	Transistor	Relay	Transistor
Isolation	Optical coupler	Relay	Optical coupler	Relay	Optical coupler
Rated voltage	24 V DC	24 V DC or 250 V AC	24V DC	24 V DC or 250 V AC	24V DC
Voltage range	20.4~28.8V DC	5~30V DC、20~250V AC	20.4~28.8V DC	5~30V DC、20~250V AC	20.4~28.8V DC
Rated current	0.75A	2.0A	0.75A	2.0A	0.75A
Lamp load (max.)	5W	30W DC/200W AC	5W	30W DC/200W AC	5W
Cable Length	Shielded	500m			
	Unshielded	150m			
Switching frequency(max.)	/	1 Hz	/	1Hz	/
Lifetime mechanical cycles	/	10,000,000	/	10,000,000	/
Contact mechanical lifetime (rated road voltage)	/	100,000	/	100,000	/
Dimension(W x H x D)	46 x 80 x 62 mm	46 x 80 x 62 mm	71.2 x 80 x 62 mm	71.2 x 80 x 62 mm	137.5 x 80 x 62 mm
Order Number	UN 222-1BF22-0XA0	UN 222-1HF22-0XA0	UN 222-1BH22-0XA0	UN 222-1HH22-0XA0	UN 222-1BL22-0XA0

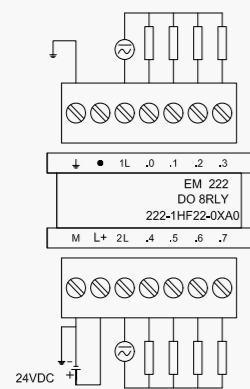
Wiring Diagram



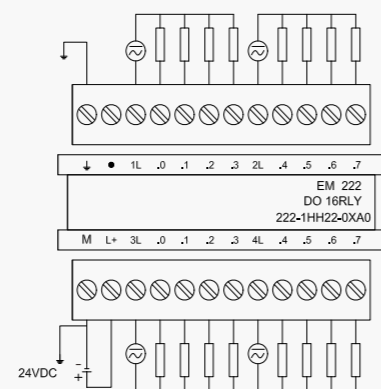
UN 222-1BF22-0XA0



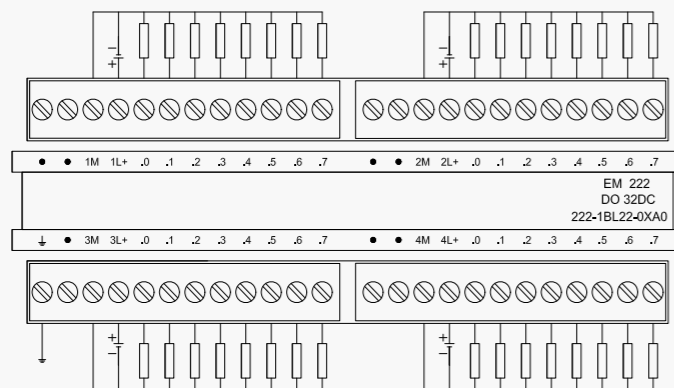
UN 222-1BH22-0XA0



UN 222-1HF22-0XA0



UN 222-1HH22-0XA0

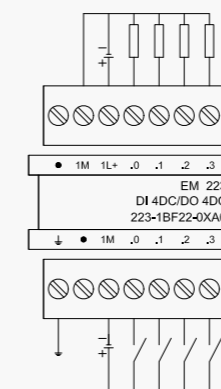


UN 222-1BL22-0XA0

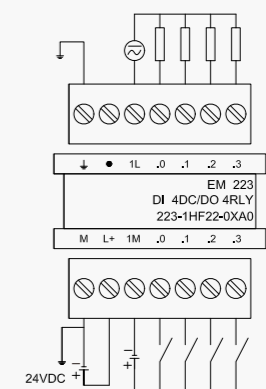
UN 200 DI/ DO Modules

Model	EM223 4DI/4DO	EM223 4DI/4DO, Relay	EM223 8 DI/8 DO	EM223 8 DI/8 DO, Relay
Product Picture				
Product Description	4DI/4DO 24V DC Transistor, output Optical isolation with high immunity, stable	4DI/4DO 24V DC/250V AC Relay output Optical isolation with high immunity, stable	8DI/8DO, 24V DC Transistor output; Optical isolation with high immunity, stable	8DI/8DO 24V DC/250V AC Relay output Optical isolation with high immunity, stable
From bus current consumption	40mA		80mA	
Total power consumption	2W		3W	
Input Features				
Digital inputs	4		8	
Rated voltage	24V DC, 4mA			
Logic 0 voltage range	0~5V DC			
Logic 1 voltage range	15~30V DC			
Input delay (max.)	4.5ms			
Signal input type	PNP/NPN			
Optical isolation (field to logic)	500 V AC, 1 minute			
Cable length	500m(Shielded); 300m(Unshielded)			
Output Features				
Digital outputs	4		8	
Output type	Transistor	Relay	Transistor	Relay
Isolation	Optical coupler	Relay	Optical coupler	Relay
Rated voltage	24V DC	24V DC or 250V AC	24V DC	24V DC or 250V AC
Rated voltage range	20.4~28.8V DC	5~30VDC/20~250V AC	20.4~28.8V DC	5~30V DC/20~250V AC
Rated Current	0.75A	2.0A	0.75A	2.0A
Lamp load (max.)	5W	30W DC/200W AC	5W	30W DC/200W AC
Lifetime mechanical cycles	/	10,000,000 (no load)	/	10,000,000 (no load)
Lifetime contacts	/	100,000 (rated load)	/	100,000 (rated load)
Cable Length	500m(Shielded); 150m(Unshielded);			
Dimension (W x H x D)	46x80x62 mm	46x80x62 mm	71.2x80x62 mm	71.2x80x62 mm
Order Number	UN 223-1BF22-0XA0	UN 223-1HF22-0XA0	UN 223-1BH22-0XA0	UN 223-1PH22-0XA0

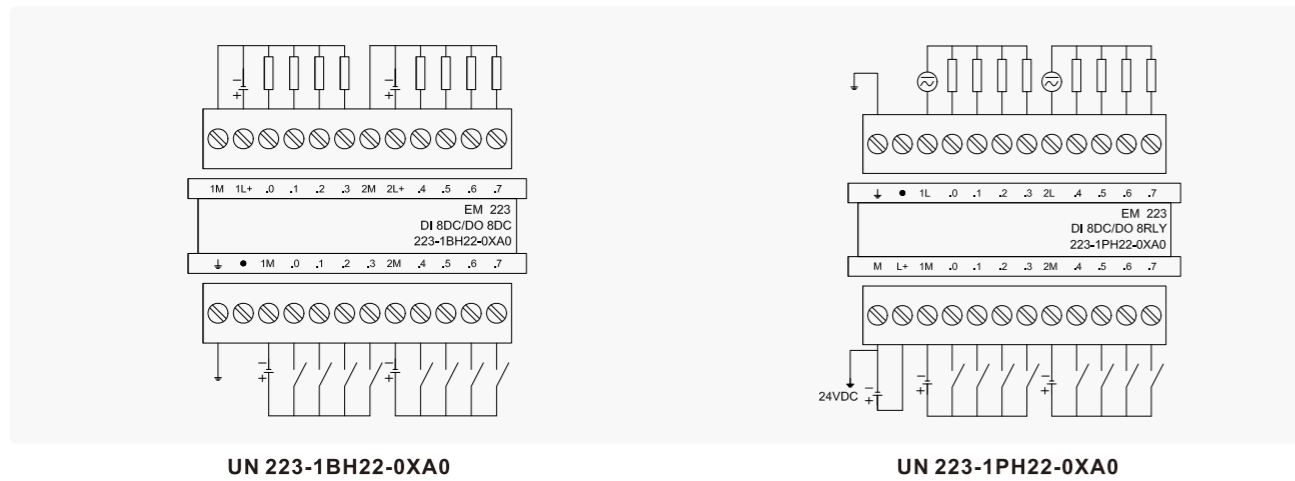
Wiring Diagram



UN 223-1BF22-0XA0



UN 223-1HF22-0XA0



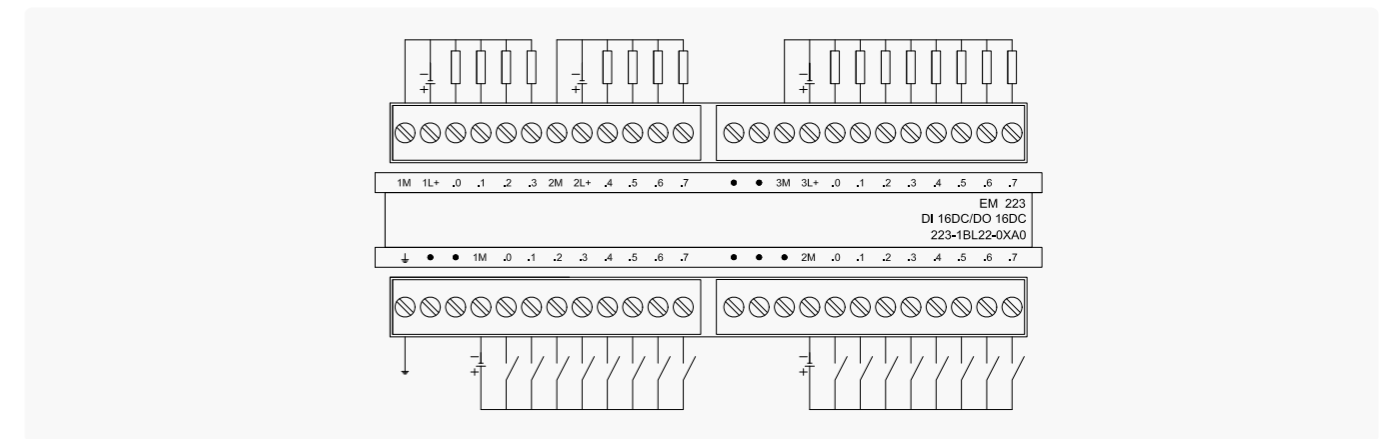
UN 223-1BH22-0XA0

UN 223-1PH22-0XA0

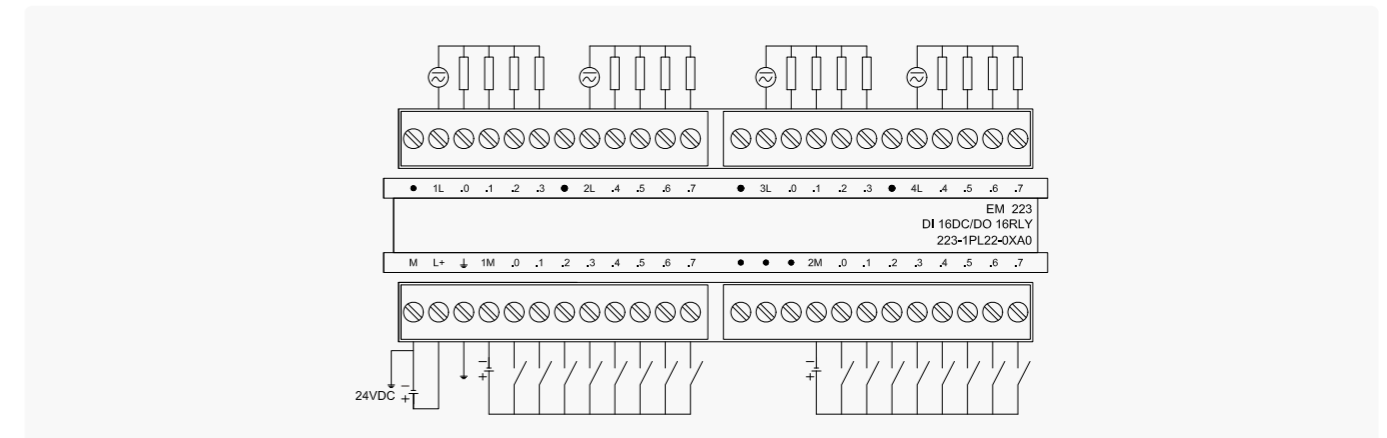
UN 200 DI/ DO Modules

Model	EM223 16DI/16DO, Transistor	EM223 16DI/16DO Relay
Product Picture		
Product Description	16DI/16DO 24 VDC Transistor output Optical isolation with high immunity.	16DI/16DO 24 VDC/250VAC Relay output, dectromagnetic isolation with high immunity.
From bus current consumption	140mA	140mA
Total power consumption	5.2W	5.2W
Digital Input Specification		
Digital inputs	16	16
Rated voltage	24 VDC	24 VDC,4mA
Logic 0 voltage range	0~5 VDC	0~5 VDC
Logic 1 voltage range	15~30 VDC	15~30 VDC
Max Input Delay	4.5ms	4.5ms
Signal input type	PNP/NPN	PNP/NPN
Optical isolation(field to logic)	500 V AC , 1 minute	500 V AC , 1 minute
Cable Length	500m(Shielded);300m (unshielded)	
Output Feature		
Digital outputs	16	16
Output type	Transistor	Relay
Isolation	Optical coupler	Relay
Rated voltage	24 VDC	24 VDC or 250V AC
Voltage range	20.4~28.8V DC	5~30 V DC/20~250V AC
Rated Current	0.75A	2.0A
Lamp load	5W	30W DC/200W AC
Lifetime mechanical cycles	/	10,000,000 (no load)
Lifetime contacts	/	100,000 (rated load)
Cable Length	500m(Shielded);150m (unshielded)	
Dimension (W x H x D)	137.5×80×62mm	137.5×80×62mm
Order Number	UN 223-1BL22-0XA0	UN 223-1PL22-0XA0

Wiring Diagram



UN 223-1BL22-0XA0






UN 223-1PL22-0XA0

UN200 Analog Module

UN200 Analog Input Module

Specifications:

Model	EM231 4 inputs × 12 bits	EM231 8 inputs × 14 bits	EM231 8 inputs × 14 bits
Picture			
Product Description	4AI,24V DC; Resolution:12bits; 24V DC No-gain calibration on circuit design . High immunity,stable	8AI,24V DC; Resolution:14bits; No-gain calibration on circuit design. Support AIW and also can change to VW according customized design. All channels support voltage range and current range, flexible. High immunity,stable	8AI,24V DC; Resolution:14bits; No-gain calibration on circuit design. Support VW and also can change to AIW according customized design. All channels support voltage range and current range, flexible. High immunity,stable
Technical Specification			
From bus current consumption	20mA	20mA	20mA
From L+ current consumption	60mA	60mA	60mA
Power loss	2W	2W	2W
Number of analog Inputs	4	8	8
Input type		Differential input	
Voltage input range: Unipolar		0~5v,0~10V	
Voltage input range: Bipolar	±2.5V,±5V	±5V,±10V	±5V,±10V
input range:current	0~20mA	0~20mA,± 20mA	0~20mA,± 20mA
Resolution	12 bit	14bits	14bits
Bipolar,full-scale range		-32,000 to +32,000	
Unipolar, full-scale range		0 to +32,000	
Cable Length (unshielded)		300m	
Input impedance		≥ 10M Ω Voltage Input 250 Ω Current Input	
Isolation (field to logic)	>2000V	No	No
Analog to digital conversion time	<250μs	<250μs	<200μs
Common mode rejection	40DB,DC to 60Hz	40DB,DC to 60Hz	80DB
Common mode voltage		Signal voltage + Common-mode voltage ≤ 12V	
Maximum input voltage		30V DC	
Maximum input current		32mA	
Address of the interval	AIW	AIW	VW
Dimension (W x H x D)	71.2×80×62 mm	71.2×80×62 mm	71.2×80×62 mm
Order Number	UN 231-0HC22-0XA0	UN 231-0HF22-0XA0	UN 231-0HH32-0XA0

DIP switch configuring table

Modules model	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	Full inputs
UN 231-0HC22-0XA0	ON	OFF	ON				0 ~ 10V
	ON	ON	OFF				0 ~ 5V
	ON	ON	OFF				0 ~ 20mA
	OFF	OFF	ON				± 5V
UN 231-0HF22-0XA0 UN 231-0HH32-0XA0	OFF	ON	OFF				± 2.5V
	OFF	OFF	ON	OFF	OFF		0 ~ 10V
	OFF	OFF	ON	ON	OFF		0 ~ 5V
	ON	ON	ON	ON	ON		0 ~ 20mA
	OFF	OFF	OFF	OFF	OFF		± 10V
	OFF	OFF	OFF	ON	OFF		± 5V
	ON	ON	OFF	ON	ON		± 20mA

★ Remark: After DIP switches are set up, it will be effective once the PLC is powered.

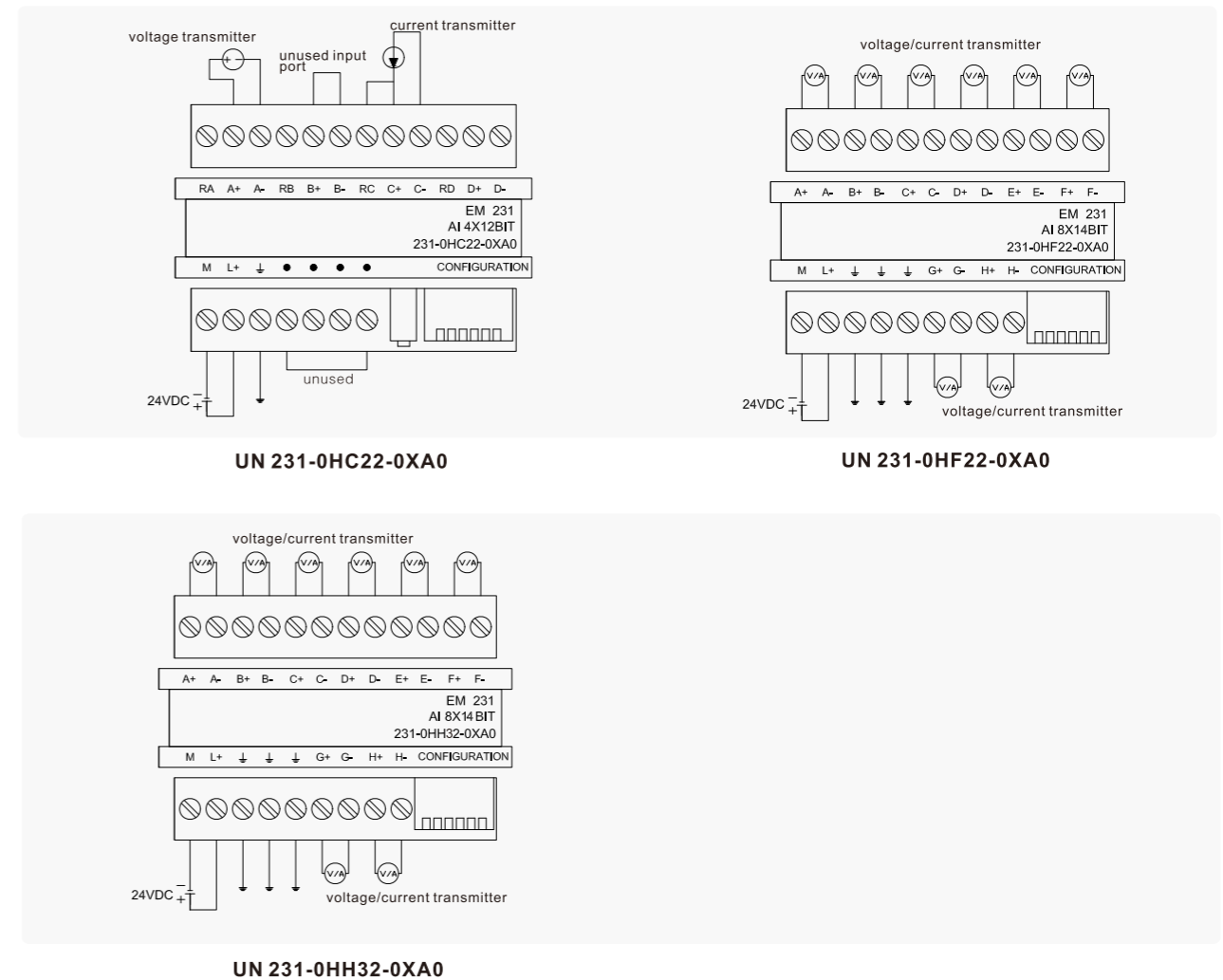
Address configuration of UN 200 analog expansion modules

For example, software address configuration of UN231-0HH32-0XA0 is VW area. Different location in rail should have different address value. Calculation formula: VW(64*i+2*j).
Remark: "i" is the location of modules. "j" is the series number of input channel. "i" and "j" start from 0 and each module has 8 input channels.

The table of UN231-0HH32-0XA0 address configuration



Expansion module No.	Channel 0	Channel 1	...	Channel 7
Expansion module 0	VW0	VW2	...	VW14
Expansion module 1	VW64	VW66	...	VW78
Expansion module 2	VW128	VW130	...	VW142
Expansion module 3	VW192	VW194	...	VW206
Expansion module 4	VW256	VW258	...	VW270
Expansion module 5	VW320	VW322	...	VW334
Expansion module 6	VW384	VW386	...	VW398

Wiring Diagram

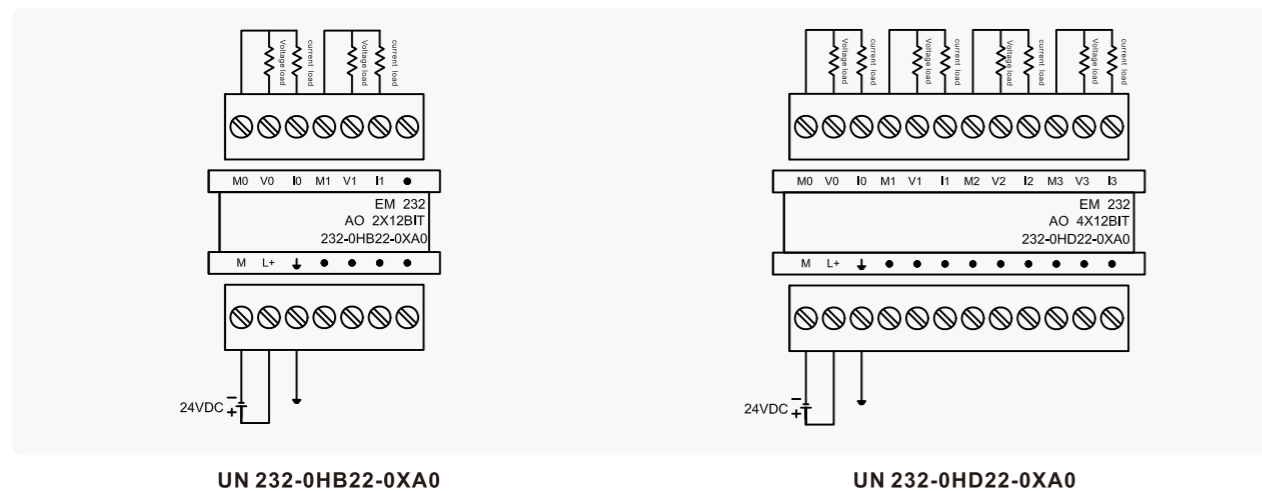


UN200 Analog Output Module

Specifications:


Model	EM232 2 outputs ×12bits	EM232 4 outputs ×12bits
Picture		
Product Description	2AO; 12 bits resolution voltage output; 11 bits resolution current output All channels support voltage output and current output, flexible.	4AO; 12 bits resolution voltage output; 11 bits resolution current output All channels support voltage range and current range, flexible.
From bus current consumption	20mA	22mA
From L+ current consumption	70mA	92mA
Total power consumption	2W	2.5W
Output Feature		
Analog output	2	4
Voltage output range		-10~+10V
Current output range		0~20mA
Load resistance		Min:5KΩ
When voltage outputs		Max:0.5KΩ
When current outputs		
Resolution		12 bits voltage output; 11 bits current output
Data word format		
Voltage output		-32,000~+32,000
Current output		0~32,000
Basic error		±0.5% FS
Dimension (W x H x D)	46×80×62mm	71.2×80×62mm
Order Number	UN 232-0HB22-0XA0	UN 232-0HD22-0XA0

Wiring Diagram

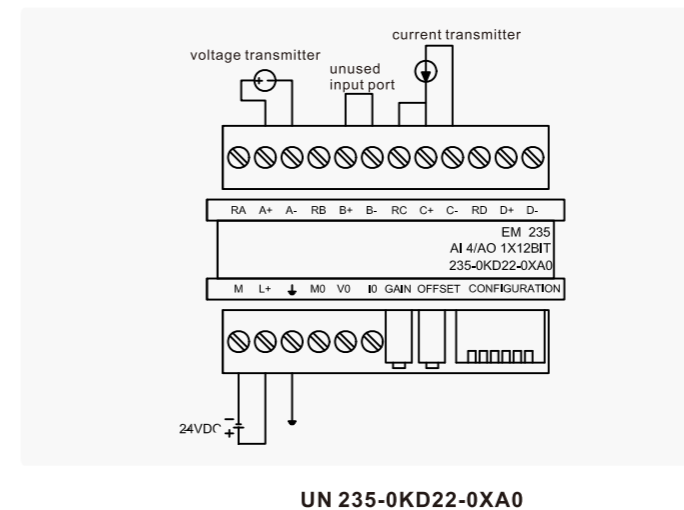


UN 200 AI/AO Modules

Specifications:

Model	EM235 4 AI / 1 AO ×12bits
Picture	
Product Description	4AI; 1AO; 12 bits resolution voltage output; 11 bits resolution current output

Wiring Diagram



Input Feature		
From bus current consumption		30mA
From L+ current consumption		60mA
Total power consumption		2W
Analog input		4
Analog input type		Differential input
Maximum input voltage		30V
Maximum input current		32mA
Voltage input range	unipolar	0~50mV, 0~100mV, 0~500mV, 0~1V,0~5V,0~10V
	Bipolar	±1V, ±2.5V, ±5V, ±10V ±25mV, ±50mV, ±100mV, ±250mV, ±500mV
Current input range		0~20mA
Resolution		12bits
Bipolar range		0~32,000
Unipolar range		-32,000~+32,000
Analog to digital conversion time		<250μs
Output Feature		
Analog output		1
Voltage output range		-10~+10V
Current output range		0~20mA
Load resistance		
When voltage outputs		Min:5KΩ
When current outputs		Max:0.5KΩ
Resolution		12 bits voltage output; 11 bits current output
Data word format		
Voltage output		-32,000~+32,000
Current output		0~32,000
Basic error		±0.5% of full range
Dimension (W x H x D)		71.2×80×62mm
Order Number		UN 235-0KD22-0XA0

DIP switches configuring table

Modules model	Switch Location	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	Full range inputs
UN 235-0KD22-0XA0		ON	OFF	OFF	ON	OFF	ON	0 - 50mV
		OFF	ON	OFF	ON	OFF	ON	0 - 100mV
		ON	OFF	OFF	OFF	ON	ON	0 - 500mV
		OFF	ON	OFF	OFF	ON	ON	0 - 1V
		ON	OFF	OFF	OFF	OFF	ON	0 - 5V
		OFF	ON	OFF	OFF	OFF	OFF	0 - 20mA
		ON	OFF	OFF	OFF	OFF	OFF	0 - 10V
		OFF	ON	OFF	ON	OFF	OFF	± 25mV
		ON	OFF	OFF	ON	OFF	OFF	± 50mV
		OFF	OFF	ON	ON	OFF	OFF	± 100mV
		ON	OFF	OFF	OFF	ON	OFF	± 250mV
		OFF	ON	OFF	OFF	ON	OFF	± 500mV
		OFF	OFF	ON	OFF	ON	OFF	± 1V
		ON	OFF	OFF	OFF	OFF	OFF	± 2.5V
		OFF	ON	OFF	OFF	OFF	OFF	± 5V
		OFF	OFF	ON	OFF	OFF	OFF	± 10V

★Remark: In order to make configured DIP switches work, must rechange PLC.

Remark for Analog input module

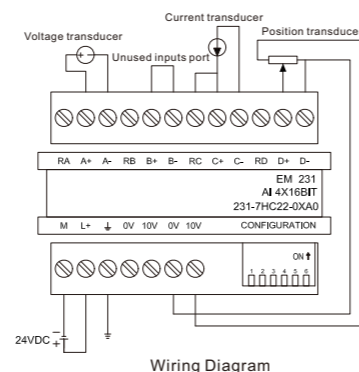
When input correct UN 235-0KD22-0XA0: Using the same voltage source or current source input "0" signal to one input terminal, and regulate OFFSET potentiometer till its read number is "0". Then input a signal of full-scale value to another input terminal, and regulate GAIN potentiometer till its read number is "32000".

Four High-Speed & High Precision Analog Input Module

Description

UniMAT electronic scale module (UN 231-7 HC22-0XA0) is a high precision, high speed 4 channel analog input module. It belongs to the extension of UN200 PLC module. Through the dial switch users may choose to measure the voltage, current, or range, resolution reaching 16 bits. The module provides two channel high accuracy of 10v power supply, and can be used as electronic scale sensor (slide rheostat) reference input power supply.

UniMAT electronic scale module is widely used in injection molding machine, woodworking machinery, printing machine, electronic scale, spraying, machine tools, robots, computer engineering monitoring control sports-equipment and other industries.



Characteristics

- four channels of analog input, can measure voltage and current, 16-bits resolution
- Can select the input filter function through the dial switch
- Precise 10 VDC, voltage output
- Strong anti-interference performance, stable

UN 200 AI/AO Modules

Technical Specification

Model	EM 231, 4AI x 16bits
From bus current consumption	20mA
From L+ current consumption	60mA
Power loss	2W
Number of analog input	4
Power input	10VDC, 0.1% precision
input type	Differential input
Voltage: Unipolar	0~5V, 0~10V
Voltage: Bipolar	± 5V, ± 10V
Current input range	0~20mA, 4~20mA, ± 10 mA
Resolution	16 bits
Bipolar, full-scale range	-32000 ~ +32000
Unipolar, full-scale range	0 ~ 32000
Cable length (unshielded)	100m
Input impedance	≥2MΩ voltage input 250Ω current input
Isolation (field to logic)	>3000V
Analog to digital conversion time	<1ms
Common mode rejection	40dB, DC to 60Hz
Common mode voltage	Signal voltage + Common mode voltage ≤12V
Maximum input voltage	30VDC
Maximum input current	32mA
Dimension (W x H x D)	71.2 x 80 x 62mm
Net Weight	150g
Order Number	UN 231-7HC22-0XA0

Dial switch setting, range choice

The table below is the setting method of dial switch. SW1, SW2 and SW3 can choose analog input range. One setting method can apply to all channels. ON means connecting, OFF means disconnecting.

Unipolar				
SW 1	SW 2	SW 3	Full range input	resolution
ON	OFF	OFF	0-5V 0-20mA	78.125μV
	OFF	ON	0-10V	156.25μV
	ON	ON	4-20mA	250nA
Bipolar				
SW 1	SW 2	SW 3	Full range input	resolution
OFF	OFF	OFF	± 5V	156.25μV
	OFF	ON	± 10V	312.5μV
	ON	OFF	± 10mA	625nA

Filtering function

The table below shows how to set the filtering function of module by using dial switch.

SW 5	SW 6	Setting characteristic	Step response time
ON	ON	Without filtering	1ms
OFF	ON	Filtering	5ms
ON	OFF	Filtering	10ms

Remark: the dial switch can work only when it is recharged.

6 dial switches determine all input setting, namely the setting of dial switch applies to entire module.

Use instructions:

1. Setting needed input range is according to dial switch;
2. Modules need to connect input signal, then connecting CPU and module power;
3. Reading corresponding channel measurement value on CPU. Knowing detailed address of module by clicking "PLC" option on editing panel, choosing "information" option can get initial address of module. (for example AIW0, AIW8 etc.)



Order Data

Name	Order No.
Four high-speed & high precision Analog input Module	UN 231-7HC22-0XA0

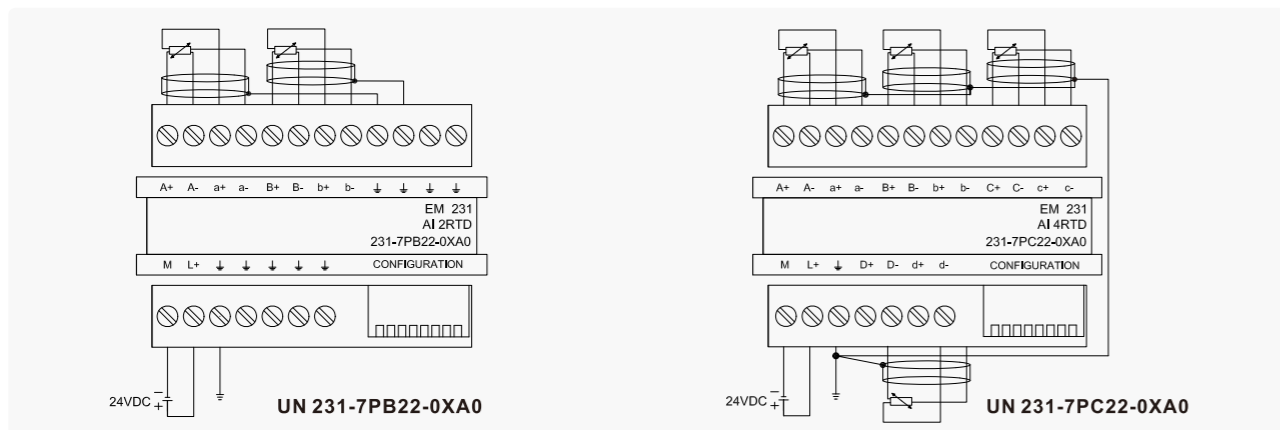
UN200 Temperature collecting Module

UN200 RTD Module

Specifications:

Model	EM231 2 inputs,RTD	EM231 4 inputs,RTD
Product Picture		
Product Description	2AI RTD temperature measurement module, Resolution:16bits, Optical isolation with high immunity	4AI RTD temperature measurement, Resolution:16bits, Optical isolation with high immunity
Technical Specification		
From bus current consumption	45mA	
From L+ current consumption	20mA	
Power loss	1W	
Number of analog inputs	2	4
Input type	Refer to ground RTD	
Common-mode rejection	>120dB@120V AC	
Wire loop resistance(Max)	20Ω (Cu10 is 2.7Ω)	
Module update time	405ms	800ms
Data word format	Resistance:0~+27648	
Input range	RTD: Pt100, Pt200, Pt500, Pt1000, Pt10000, Ni100, Ni120, Ni1000, Cu10(9.035) Resistance: 150Ω, 300Ω, 600Ω	
Measuring principle	Sigma → delta	
Resolution	15 bits plus sign	
Basic error	0.1%FS	
Isolation (field to logic)	>500V	
24VDC supply voltage range	20.4~28.8V DC	
Dimension (W x H x D)	71.2×80×62mm	
Order Number	UN 231-7PB22-0XA0	UN 231-7PC22-0XA0

Wiring Diagram



UN 200 RTD modules DIP switches configuring table

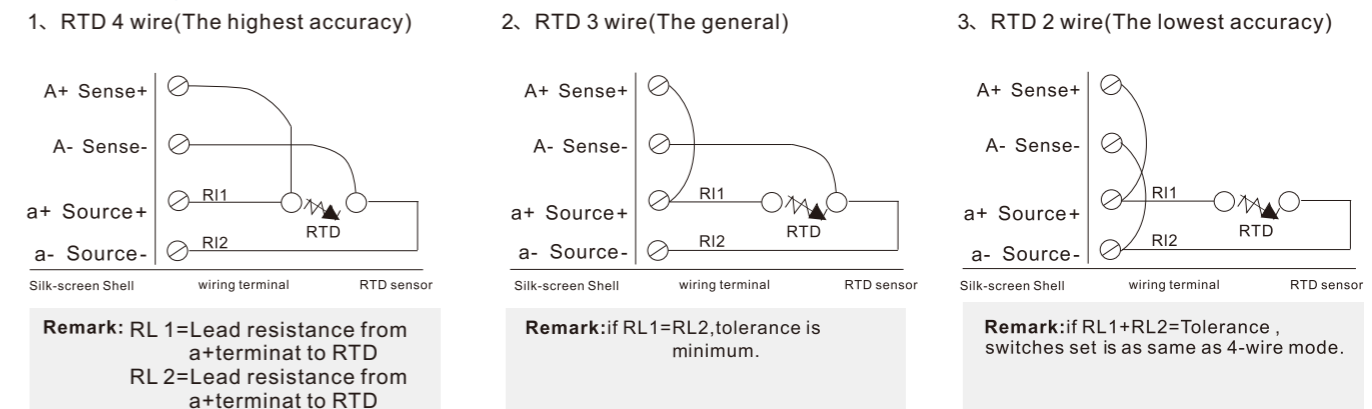
Model location	UN 231-7PB22-0XA0		UN 231-7PC22-0XA0	
	Options	Setting	Options	Setting
SW1~SW5	RTD: Pt100, PT200, PT500, PT1000, Pt10000 Ni100, Ni120, Ni1000, Cu10(9.035) Resistance: 150Ω, 300Ω, 600Ω		RTD: Pt100, PT200, PT500, PT1000, Pt10000 Ni100, Ni120, Ni1000, Cu10(9.035) Resistance: 150Ω, 300Ω, 600Ω	
SW6	Open wire detect detection	0: positive(+3276.7) 1: Negative(-3276.8)	Open wire detect direction	0: positive(+3276.7) 1: Negative(-3276.8)
SW7	Temperature scale	0: Celsius (°C) 1: Fahrenheit (°F)	Temperature scale	0: Celsius (°C) 1: Fahrenheit (°F)
SW8	Scheme	0: 3-wire 1: 2-wire or 4-wire	Wiring scheme	0: 3-wire 1: 2-wire or 4-wire

UN 200 RTD temperature measurement modules DIP switches configuring table

RTD type	SW1	SW2	SW3	SW4	SW5	RTD type	SW1	SW2	SW3	SW4	SW5
100Ω Pt0.003850 (default)	0	0	0	0	0	100Ω Pt0.003902	1	0	0	0	0
200Ω Pt0.003850	0	0	0	0	1	200Ω Pt0.003902	1	0	0	0	1
500Ω Pt0.003850	0	0	0	1	0	500Ω Pt0.003902	1	0	0	1	0
1000Ω Pt0.003850	0	0	0	1	1	1000Ω Pt0.003902	1	0	0	1	1
100Ω Pt0.003920	0	0	1	0	0	100Ω Ni0.00672	1	0	1	0	0
200Ω Pt0.003920	0	0	1	0	1	200Ω Ni0.00672	1	0	1	1	0
500Ω Pt0.003920	0	0	1	1	0	500Ω Ni0.00672	1	0	1	1	1
1000Ω Pt0.003920	0	0	1	1	1	1000Ω Ni0.00672	1	0	1	1	1
100Ω Pt0.00385055	0	1	0	0	0	100Ω Ni0.006178	1	1	0	0	0
200Ω Pt0.00385055	0	1	0	0	1	200Ω Ni0.006178	1	1	0	0	1
500Ω Pt0.00385055	0	1	0	1	0	500Ω Ni0.006178	1	1	0	1	0
1000Ω Pt0.00385055	0	1	0	1	1	1000Ω Ni0.006178	1	1	0	1	1
100Ω Pt0.003916	0	1	1	0	0	10Ω Cu0.004270	1	1	1	0	0
200Ω Pt0.003916	0	1	1	0	1	150Ω FS Resistance	1	1	1	0	1
500Ω Pt0.003916	0	1	1	1	0	300Ω FS Resistance	1	1	1	1	0
1000Ω Pt0.003916	0	1	1	1	1	600Ω FS Resistance	1	1	1	1	1

Remark: When RTD value is matched with this table, the temperature is 0°C, but Cu10's value the temperature is 25°C, when 0°C, the RTD value is 9.035Ω.

The wiring scheme of UN 200 RTD temperature measurement modules

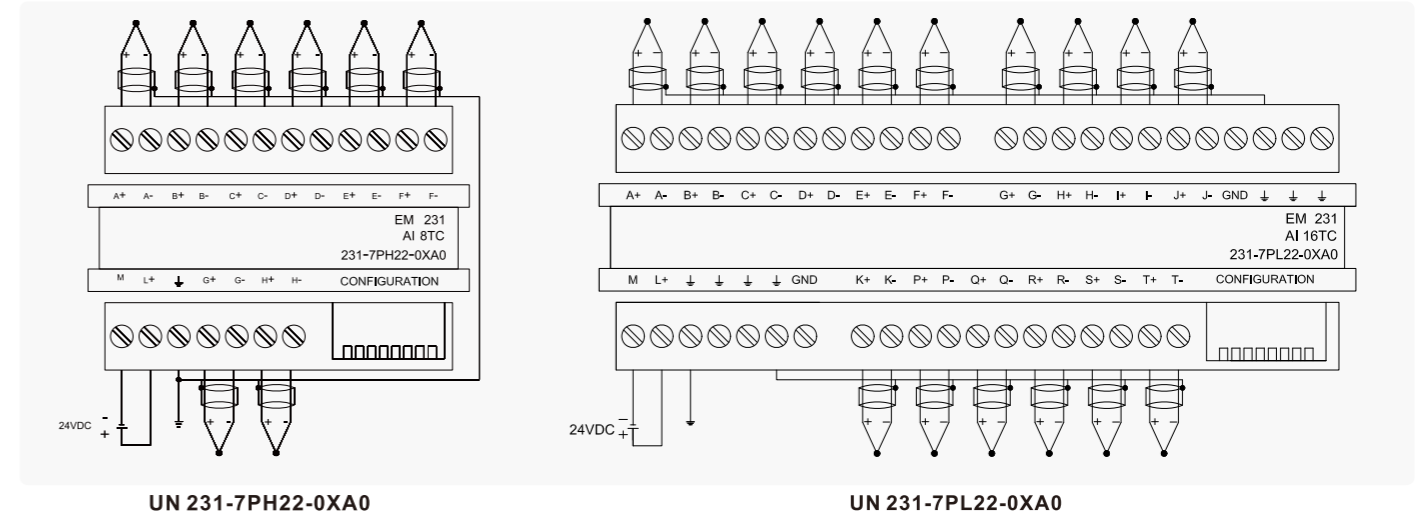
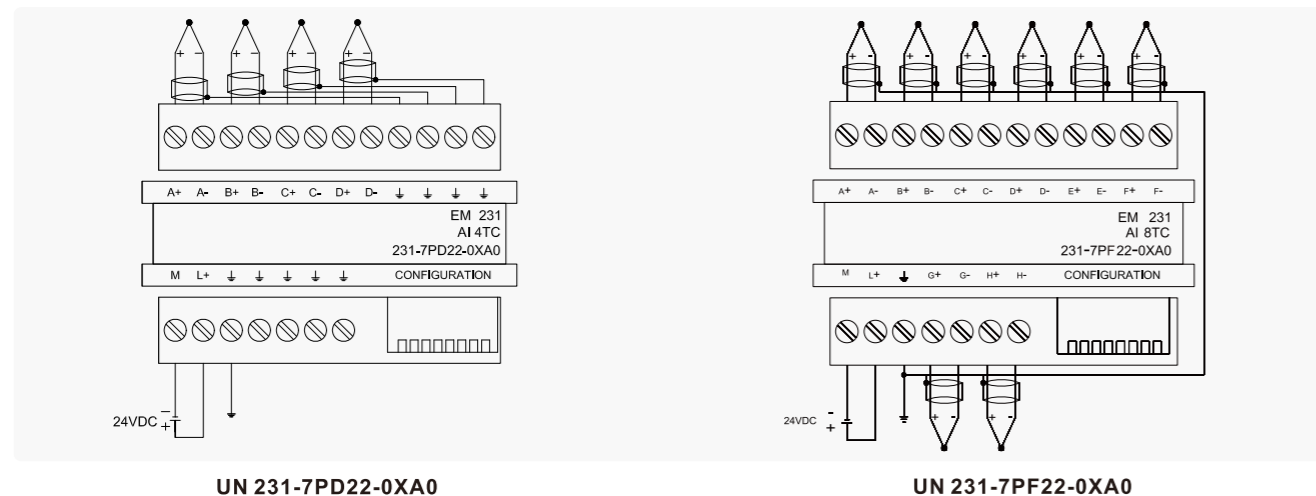


UN 200 TC Module

Specifications:

Model	EM231 4AI TC	EM231 8AI TC	EM231 8AI TC	EM231 16AI TC
Product Picture				
Product Description	4AI Thermocouple temperature measurement modules; Resolution:16bits Optical isolation; high immunity;stable	8AI Thermocouple temperature measurement modules; Resolution:16bits Optical isolation; high immunity;stable	8AI Thermocouple temperature measurement modules; Resolution:16bits Optical isolation; high immunity;stable	16AI Thermocouple temperature measurement modules; Resolution:16bits Optical isolation; high immunity;stable
Technical Specification	Floating Thermocouple >120dB@120V AC 100 Ω			
From bus current consumption	87mA	107mA	107mA	110mA
From L+ current consumption	60mA	60mA	60mA	40mA
Power loss	1.8W	2.1W	2.1W	2.1W
Number of analog inputs	4	8	8	16
Signal input type	Floating Thermocouple			
Common-mode rejection	>120dB@120V AC 100 Ω			
Module update time	290ms	580ms	580ms	1030ms
Data word format	Voltage:-27648~+27648			
Input range	Type: E,J,K,N,R,S,T Voltage range:±80mV			
Measuring principle	Sigma→delta			
Resolution	15+1 Sign bit			
Address of the interval	AIW		VW	
Basic error	0.1%FS			
Isolation (field to logic)	>3000V			
24VDC supply voltage range	20.4~28.8V DC			
Dimension (W x H x D)	71.2×80×62 mm	71.2×80×62 mm	71.2×80×62 mm	137.5×80×62 mm
Order Number	UN 231-7PD22-0XA0	UN 231-7PF22-0XA0	UN 231-7PH22-0XA0	UN 231-7PL22-0XA0

Wiring Diagram



UN 200 thermocouple temperature measurement modules DIP switches configuring table

Model	UN 231-7PD22-0XA0		UN 231-7PF22-0XA0		UN 231-7PH22-0XA0		UN 231-7PL22-0XA0	
	Options	Setting	Options	Setting	Options	Setting	Options	Setting
Location SW1~SW3	Thermocouple type:J,K,T,E,R,S,N,±80mV							
SW4	Reserved for non-use				Open wire detect direction	0:positive (+3276.7) 1:Negative (-3276.8)		
SW5	Open wire detect direction	0:positive(+3276.7) 1:Negative(-3276.8)		Open wire detect enable	0:enable 1:disable			
SW6	Open wire detect enable	0:enable 1:prohibitive		Temperature scale	0: Celsius(°C) 1: Fahrenheit(° F)			
SW7	Temperature scale	0: Celsius(°C) 1: Fahrenheit(° F)						
SW8	Cold junction compensation	0:Yes 1: No						

UN 200 4TC/8TC/16TC thermocouple type and DIP switches SW1-SW3 configuring table

Switching state	SW1	SW2	SW3
↑ 1-ON	1	1	1
↓ 0-OFF	0	0	0

TC type	SW1	SW2	SW3
J (default)	0	0	0
K	0	0	1
T	0	1	0
E	0	1	1
R	1	0	0
S	1	0	1
N	1	1	0
+/-80mv	1	1	1

Address configuration of UN 200 analog expansion modules

For example, software address configuration of UN231-7PL22-0XA0, UN231-7PH22-0XA0 is VW area. Different location in rail should have different address value. Calculation formula: VW(64*i+2*j). Remark: "i" is the location of modules. "j" is the series number of input channel. "i" and "j" start from 0 and each module has 16 input channels. (UN231-7PH22-0XA0 is 8 channels)

Location value in Rail	Chanal 0	Chanal 1	...	Chanal 7	Chanal 8	...	Chanal 14	Chanal 15
Location 0	VW 0	VW 2	...	VW 14	VW16	...	VW 28	VW 30
Location 1	VW 64	VW 66	...	VW 78	VW80	...	VW92	VW94
Location 2	VW 128	VW 130	...	VW 142	VW144	...	VW156	VW158
Location 3	VW 192	VW 194	...	VW 206	VW208	...	VW220	VW222
Location 4	VW 256	VW 258	...	VW 270	VW272	...	VW284	VW286
Location 5	VW 320	VW 322	...	VW 334	VW336	...	VW348	VW350
Location 6	VW 384	VW 386	...	VW 398	VW400	...	VW412	VW414

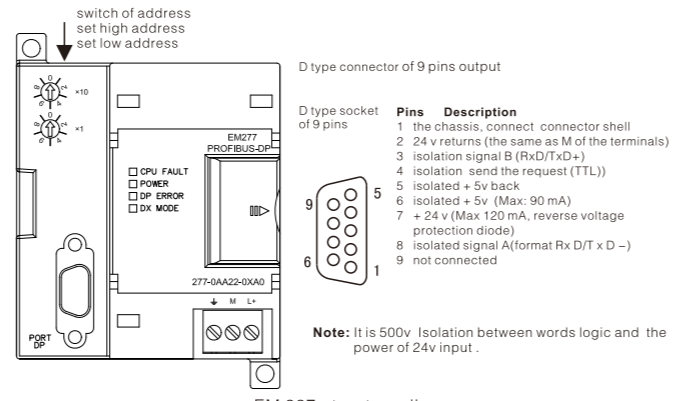
EM 277 Profibus-DP Module

1. EM277 Overview

EM277 is a communication expansion module observing Profibus-DP. This protocol is a remote I/O communication protocol customized by European standard EN50170, DP stands for distributed peripheral, Profibus means Process Field Bus. EM277 can be used as a slave (supports Profibus) device to realize DP standard protocol.



EM 277



2. Specification

Dimension(WxHxD)	71x80x62mm	
Voltage range	20.4 to 28.8VDC	
Current consumption Max.(24V DC)	70mA	
Isolation (Input power with logic circuit)	500V	
5V DC consumption on BUS	150mA	
Port	1	
Port Type	RS485	
Protocol	Profibus-DP	
Profibus-DP speed	9.6, 19.2, 45.45, 93.75, 187.5, and 500Kbps 1.5, 3.6 and 12Mbps	
Stations address setting	0-99 (setting by rotary switch)	
Max. Stations per period	32	
Max. Stations per Net	126, but maximum 99 EM277 stations	
Cable Length	Below 93.75Kbps	1200 m
	187.5Kbps	1000 m
	500Kbps	400 m
	1 to 1.5Mbps	200 m
	3 to 12Mbps	100 m

3. LED Status indicator

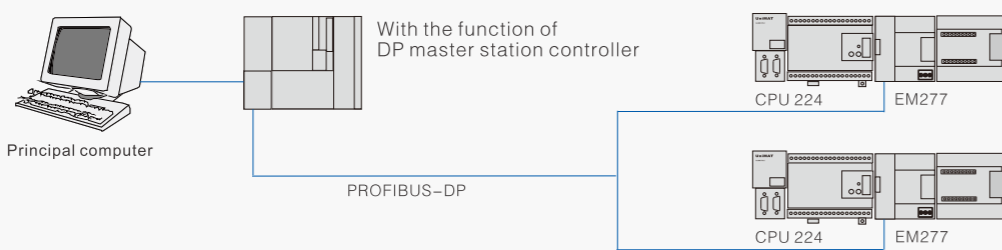
On the front side of EM277, there are four state LED to indicate the operation of DP interface

- After 200CPU power on, DXMODE LED off till DP communication starts.
- After DP communication initializes successfully(EM277 Profibus-DP module is exchanging data with Master), DXMODE LED turns green till data exchange finished.
- If DP communication is broken, EM277 is forced to exit data exchange mode, DXMODE LED is off and DP/ERROR LED turns red. This state keeps till 200CPU power off or data exchange starts again.
- If the I/O configuration or parameter information which Master writes into EM277 is wrong, then DP/ERROR is shining RED.
- If no 24V DC power supply, then POWER LED is off.

LED	OFF	RED	RED shining	Green
CPU Error	Module is good	Internal module failure	--	--
Power	No 24V DC user power	--	--	24VDC user power good
DP ERROR	No error	Left data exchanging mode	Parameterization/configuration Error	--
DX MODE	Not in data exchange mode	--	--	In data exchange mode

4. Configuration

It can connect UN200 PLC system to Profibus-DP net through EM277 expansion module. EM277 connect 200 series CPU by BUS, Profibus-DP connects EM277 through DP communication ports. Refer to picture 2 it is a Profibus-DP net is using EM277 communication (remark: not support program download and connect HMI), Profibus means Process Field Bus. EM277 can be used as a slave (supports Profibus) device to realize DP standard protocol.



5. Order Data

Name	Specifications	Order No.
EM 277	PROFIBUS-DP slave station interface module, Photoelectric isolation	UN 277-0AA22-0XA0

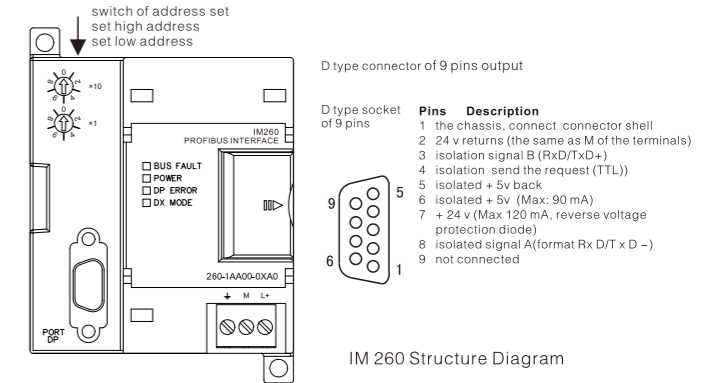
IM 260 Profibus-DP Interface Module

1. IM260 Overview

IM260 is an interface module. It can connect UN200 PLC system to Profibus-DP net (IM260 connects UN200 modules by serial I/O BUS), Profibus-DP net connects IM260 through its DP communication ports which can operate any Profibus baud rate between 9600bps and 12Mbps. As Analog slave station device of Profibus-DP net, Profibus-DP interface modules can connect 7pcs UN200 digital/analog in/out/output expansion modules to transmit and receive different amounts of data. This property enables users to change different UN200 series modules so as to meet the demand of practical use.



IM 260

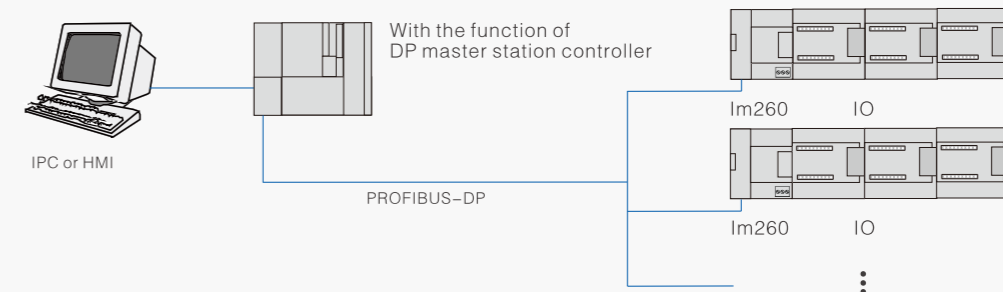


2. Technical Parameter

Dimension(WxHxD)	71x80x60mm	
Port	1	
Port type	RS485	
Protocol	Profibus-DP V0	
Profibus-DP speed (automatically)	9.6, 19.2, 45.45, 93.75, 187.5, and 500Kbps 1.5, 3.6 and 12Mbps	
Networking performance		
Stations address setting	0-99 (setting by rotary switch)	
Max. Stations per period	32	
Max. Stations per Net	126, but maximum 99 EM277 stations	
Max. Numbers of UN200 expansion Modules	7	
Cable Length	Below 93.75Kbps	1200 meters
	187.5Kbps	1000 meters
500Kbps	500Kbps	400 meters
	1-1.5Mbps	200 meters
3-12Mbps	3-12Mbps	100 meters
	24V DC input power	Voltage range
24V DC power of port	Max. Current (activate the ports)	2A peak
	Ripple & Noise (<10MHz)	<1V peak-to-peak (Max.)
Isolation	Voltage range	20.4-28.8V DC
	Output current	300mA (Max.)
	Isolation	No isolation, circuit is same as input 24V DC circuit

3. GSD

Before using IM260, you need to install IM260 corresponding GSD files in the software. Through IM260 interface module, it can let the Profibus-DP master station in the network to remote operations UN200 I/O port extension module. Though DP port of IM260 module, it can be connected to the Profibus-DP network in the DP master station, and communicate such as 315-2DP and other DP master Station on the same network. (You can download from www.unimat.com.cn for IM 260 GSD document.)



4. Order Data

Name	Specifications	Order No.
IM 260	PROFIBUS-DP interface module, Photoelectric isolation	UN 260-1AA00-0XA0

UN 200 Special Accessories

USB-PPI Adapter



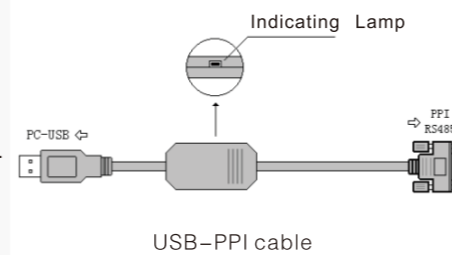
1. Description

USB-PPI adapter is used to communicate UniMAT UN200 PLC to other automatic products that support PPI & advanced PPI protocol. The circuit has built-in optical isolation to ensure the system operated safely in the industrial fields that have big disturbance and the communication ports are easily broken.

It can replace Siemens PC/PPI USB adapter, as it has all functions that Siemens adapter has. It supports Multi Master Communication and can adapt band rate automatically in MMC.

2. Characteristics & Technical Specifications

- Supports USB/PPI operation system: Windows2000/Windows XP
- USB/PPI software version: STEP7/Micro/WIN V4.0 SP3 and above, no need for any drive program.
- USB is compatible with USB V1.1 and USB V2.2 standard completely.
- Power supply & consumption
USB port: USB backplane power supply is DC5V and power consumption is about 50mA.
485 port :PPI port power supply is DC24V and power consumption is about 15mV.
- USB 485 interface was overcurrent protection, lightning-defend protection and reverse power protection.
- Optical galvanic voltage: 1000VDC or 3500VAC
- Baud Rate: 9.6Kbps, 19.2Kbps, 187.5Kbps and automotive adapt baud rate in Multiple Master Network.
- Supports communication protocol: PPI, Advanced PPI
- Supports Multiple Master Network
- Supports long distance communication, RS485 port max. distance: 2Km (9.6Kbps), 1Km(187.5Kbps)
- Each PC supports only one USB cable
- Work temperature: -10~+70°C
- PC port cable length: 0.8m
- 3m standard cable length (can be), black color.



3. The Definition of Rs485 port D89 pin signal customized

Series No.	Signal	Description
1	Ground	RS485 logic ground
2	24V-	24V power ground
3	Signal B	RXD/TXD+ (RS485 signal +)
4	RTS	Current control signal (TTL level)
5	Ground	RS485 logic ground
6	+5V	5V Power +
7	24V+	24V Power +
8	Signal A	RXD/TXD- (RS485 Signal -)
9	Protocol choice	

Indicating Lamp Instruction:

- PPI Indicators: and PLC PPI interface normally communicate.
- USB Indicators : USB-PPI Adapter and PC USB interface communicate.
- POWER Indicators : USB-PPI Adapter and PLC 485 interface power up normally.

Supporting equipment applications:

- UniMAT UN200 CPU
- All other CPUs which is compatible with UN200 CPU (Such as Siemens S7-200 CPU)
- All HMI devices that support PPI protocol

4. Order Data:

Name	Order Number
USB-PPI Adapter	UN901-3DB30-0XA0

UN 200 Special Accessories



RS232-PPI Serial-Port Adapter

1. Description

- It is fulfilled the PPI network connection and PPI protocol, MODBUS protocol between PCs and S7-200PLC.
- Baud rates adapt automatically, no need to set dial switch.
- The communication interface is optoelectronic isolation. Transient over-voltage protection circuit of built-in anti-static, anti-surge, ect. can effectively prevent the communication port from being damaged.

2. Technical specifications

PPI serial-port adapter	UN 901-3CB30-0XA0
PPI interface	
Type	RS485 isolation type
Cable interface	9-pin SUB-D interface(Male)
Baud rate	0~28.8kbps self-adaption
Max.communication distance	2KM(baud rate:9.6kbps)
Communication interface	
Type	RS 232
Cable interface	9-pin SUB-D interface(Female)
Permissible conditions	
Operating temperature	-20°C~+60°C
Storage temperature	-20°C~+60°C
Operating humidity	5%~85%(30°C)
Storage humidity	5%~93%(40°C)
Dimension (W×H×D)	130×50×25 mm, the total length of cable:5m
Weight	255g

3. Order Data

Name	Order Number
RS232-PPI Serial-Port Adapter	UN901-3CB30-0XA0

UN 200PLC Bus Extension Cable



1. Product Description

This cable is used for the bus extension of UN 200 and S7-200 series PLC.

2. Characteristics

- With anti-interference magnetic loops;
- The total length is 80cm, the distance between centers of tracks
- 10PIN wiring.

3. Order Data

Name	Order Number
UN 200 PLC Bus Extension Cable	UN 290-6AA20-0XA0

UN 200 Power Supply

Load power supply for UN120/ UN200 series

- 100-240V AC input voltage
- 1.6A, @ 50/60Hz, max.
- 24V DC; 2.5A power supply

3. Order Data

Name	Order Number
UN 207 24V DC/2.5A Power Supply	UN 207-1CB00-0AA0

