

PLC-CPU-CM2-BP Series



FEATURES

- **Processor Speed: 200ns/Step**
- **8K Steps of Program Memory**
- **Suitable for Small Scale Control**
- **Built-in Communication Options**
1 or 2 RS232C Channels
1 or 2 RS422/485 Channels
- **Ethernet**
- **Up to 2 Analog Blocks Can be Added (8 Channels)**
- **Built-in High-Speed Counter**
- **Up to 3 Expansion Blocks Can be Added (Except PLC-CPU-CM2-BP16M Series)**



DESCRIPTION

The PLC-CPU-CM2-BP series is ideal for small applications requiring high processing speeds. The CPU runs up to 200 ns/step and comes with the ability to connect up to 128 I/O expansion modules. Built-in power, communication, and I/O points eliminate the need for any external units, simplifying the set up process. The PLC-CPU-CM2-BP unit is available with 1 or 2 RS232C channels, 1 or 2 RS422/485 channels, and the option of Ethernet. This CPU also provides the option of adding up to 2 additional analog blocks. Choose between an all digital I/O and all analog I/O. Additional features include password protection for software infringement prevention, and self-diagnosis to detect errors in Flash Memory, CPU or DRAM.

GENERAL SPECIFICATIONS

Model		PLC-CPU-CM2-BP32A	PLC-CPU-CM2-BP32B	PLC-CPU-CM2-BP32M	PLC-CPU-CM2-BP16M
Power		100 ~ 240 VAC / 24 VDC			
Digital Input		24 VDC			
Digital Output		Relay / Transistor Sink / Transistor Source			
Expansion Option		AD / DA / AD+DA / TC / IO (Max 3 Steps)			Not Expandable
Standard I/O		DI: 8, DO: 8 AI (Voltage/Current): 2 AO (Voltage/Current): 2	DI: 8, DO: 8 AI (RTD): 2 AO (Voltage/Current): 2	DI: 16 DO: 16	DI: 8 DI: 7
Program Control Type		Stored Program, Cyclic Operation, Time Driven Interrupt			
I/O Control Type		Indirect, Direct by Instructions			
Program Language		IL (Instruction List), LD (Ladder Diagram)			
Instruction	Sequence	62 Instructions			
	Application	308 Instructions			
Processing Rate		200 ns/Step			
Program Memory Capacity		8k Steps			

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Self-Diagnosis and Built-In Functions

Type		Function
Self-Diagnosis	Operation Delay Monitoring	Stops PLC Operation in Case the Detected Time is Over the Set Time
	Error in Memory	Detected Errors in Flash Memory in a CPU or DRAM of Each Specialty Card
	Power Trouble	Detects Temporary Breakdown in Case Input Voltage is too Low
Built-In Functions	High-Speed Counter	3 Kpps
	PID Auto Tuning	Executes Automatic PID Operation (Max. 32 Loops)
	Password	Programs Can be Password Protected
	24 VDC Power Output	Allows Controlling Sensors, Switches (300 mA), etc.

I/O Points

Model	X	Y	M	L	K	F	T	C	S	D	Z
PLC-CPU-CM2-BP32M	128	128	4,096	1,024	1,024	2,048	256	256	100*100	5,000	1,024
PLC-CPU-CM2-BP16M	8	7	4,096	1,024	1,024	2,048	256	256	100*100	5,000	1,024

Key	Description
X	Input
M	Sub Relay
T	Timer
D	Data Device
L	Link Relay
F	Special Relay
Y	Output
K	Keep Relay
C	Counter
D	Sub Data Device
S	Step Control Relay

- **Bit Data:** [Device]+[Card No.]+[Bit No.]
 - Device: X, Y, M, K, L, F, Card No.: 10Dec(Decimal). 3 Characters
 - Bit No.: 16 Hex. 1 Character
 - Ex) X0100 -> 10Dec. (Word) + 16Hex(Last Bit)
 - :[10th Address and 0th bit
- **Word Data:** [Device]+[Card No.]
 - Device: D, Z, T, C, Card No.: 10Dec. 4 Characters
 - Ex) D0100 -> 10Dec. (Word): [100th word Address]
- **Timer, Counter Output:** [Device]+[Card No.]
 - Device: T, C, Bit No. : 10Dec. 4 Characters
 - Ex) T0100 -> 10Dec. (Word): [T 100th Bit Address]
- **Step Controller I/O:** [Device]+[Card No.]+[.]+[Step No.]
 - Device: S
 - Card No.: 10Dec. 2 Characters, Step No.: 10Dec. 2Characters
 - Sxx.xx -> xx is 10Dec.(0~99)
- **Assign Bit Device to Word:** [Device]+[Card No.]+[0]
 - Device: X, Y, M, K, L, F, Card No.: 10 Dec. 3Characters
 - Ex) X010 -> 10Dec. (Word), [X 10th Address]

Items	DC Input	Relay Output	TR Output
Rated Voltage I/O	DC 24V	AC 220V/ DC 24V	DC 12V / 24V
Rated Current I/O	4mA	1 point 2A / COM 5A	1 point 0.2A, COM 2A
On V/A	DC19V/3mA	-	-
Off V/A	DC6V/1mA	-	-
Response Time	3ms or less	10ms or less	1ms or less
Operation Indicator	Input ON, LED ON	Input ON, LED ON	Input ON, LED ON
Insulation Method	Photo Coupler Insulation	Relay Insulation	Photo Coupler Insulation
Input Method	Sink/SRC	-	-
Output Method	-	Relay	Sink
Circuit Diagram			

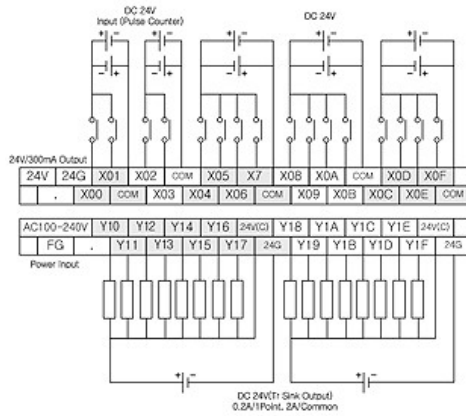
*Each module has the communication options listed below, just append the model letter to the existing part number. E.G. PLC-CPU-CM2-BP32MDTA-R

Item	RS232C 2 Ch.	RS422/485	RS422/485 2 Ch.	RS232C
Model	*R	*S	*U	*T
Power	Supplied from CPU module			
Comm. mode	Exclusive	HMI Protocol (1:n Support Communication)		
	Loader	x	x	Loader Communication
	User	x	x	Protocol Program
	MODBUS	x	x	Master & Slave
	PLC Link	x	x	Supported
Data Type	Data Bit	7 or 8 bits		
	Spot Bit	1 or 2 bits		
	Parity	Even / Odd / None		
Synchronous Type		Asynchronous		
Transmission Speed		300 / 600 / 1,200 / 2,400 / 4,800 / 9,600 / 19,200 / 38,400 / 76,800		
Modem Connection Function		Communication with an External Modem Unit		

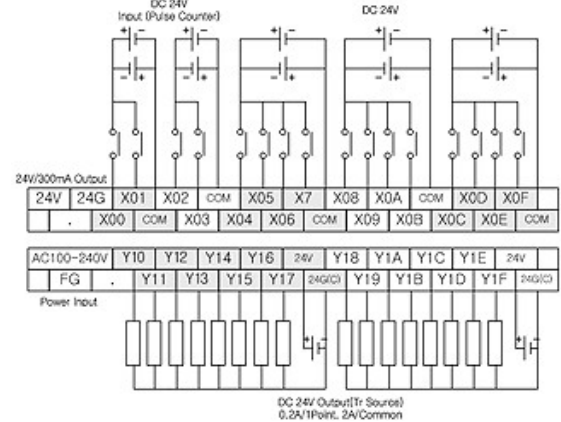
Item	Ethernet
Model	*E
Power	Supplied from CPU Module
Standard	10 Base-T
Trasmission Speed	10 Mbps
Max. Segment Length	100 m (Node - Hub)
No. of Max. Nodes	Enables to Link with 4-Line Hub
Max Protocol Size	1,500 Bytes
Comm. Access Method	CSMA/CD

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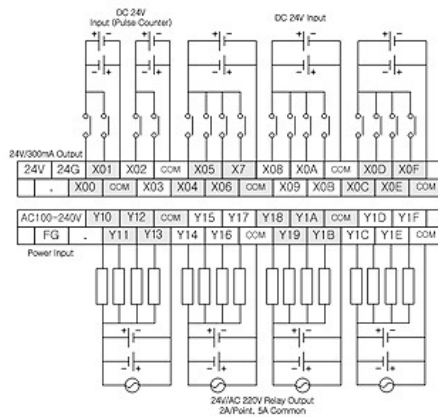
PLC-CPU-CM2-BP32MDTA



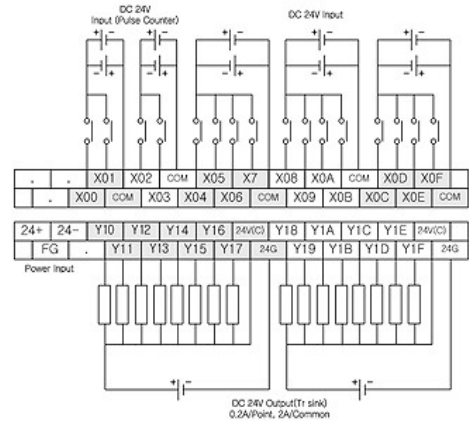
PLC-CPU-CM2-BP32MDCA



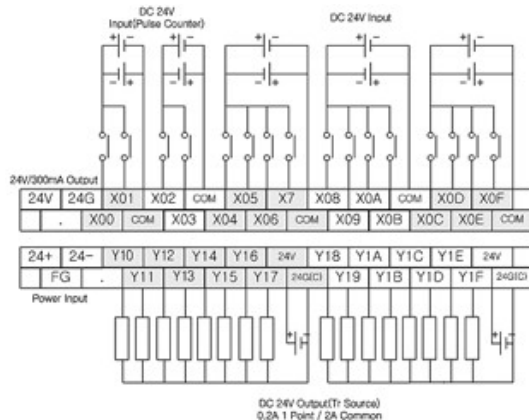
PLC-CPU-CM2-BP32MDRA



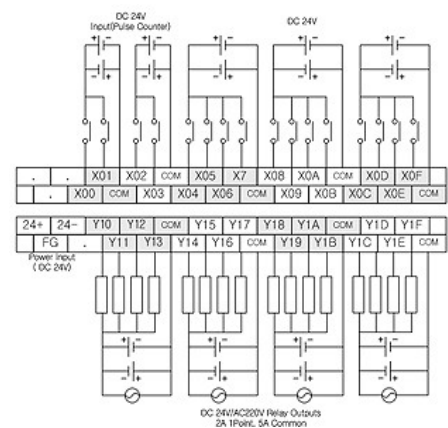
PLC-CPU-CM2-BP32MDTD



PLC-CPU-CM2-BP32MDCD



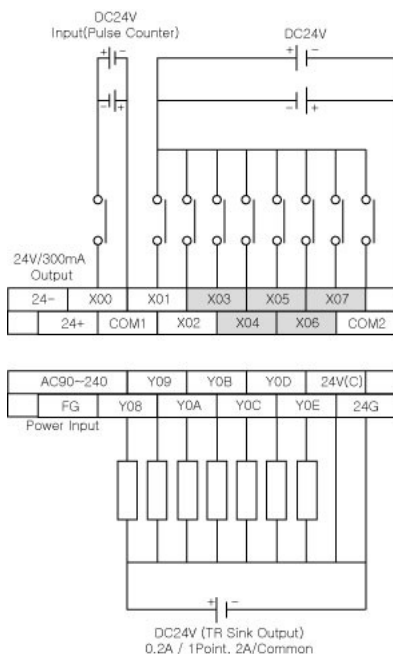
PLC-CPU-CM2-BP32MDRD



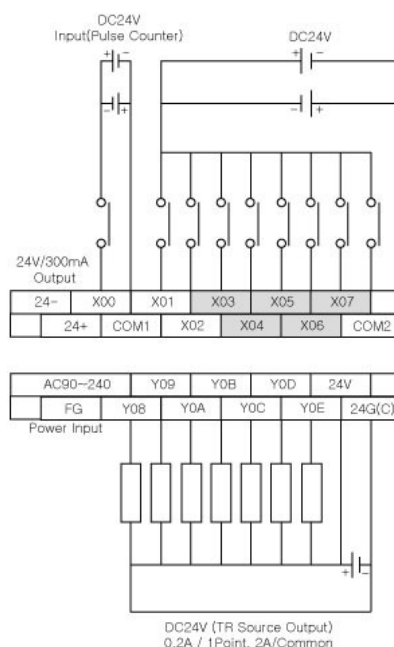
PLC-CPU-CM2-BP Series



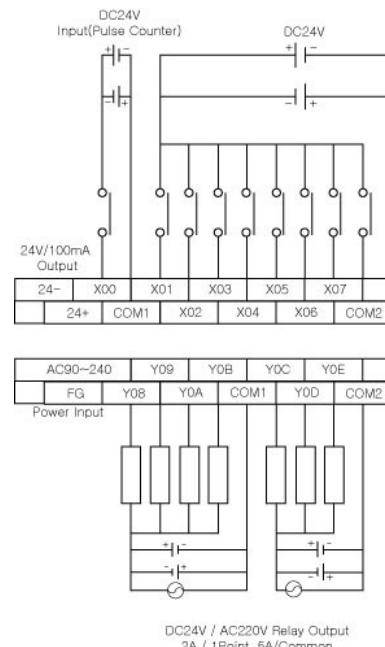
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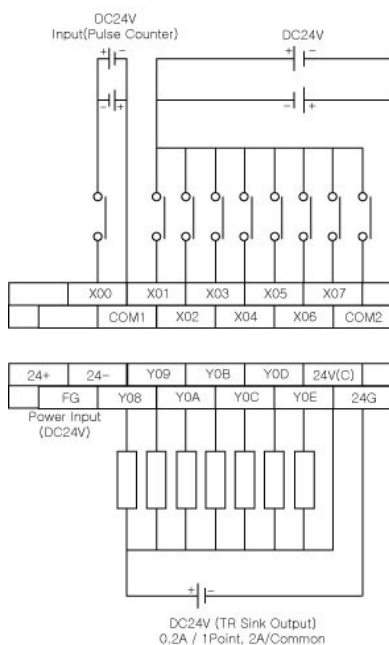
PLC-CPU-CM2-BP16MDCA



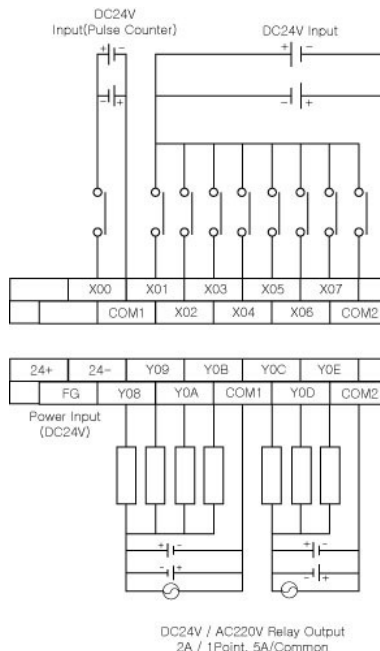
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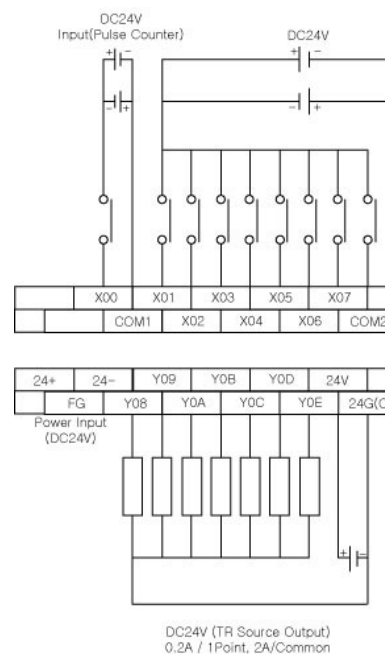
PLC-CPU-CM2-BP16MDTD



PLC-CPU-CM2-BP16MDRD



PLC-CPU-CM2-BP16MDCD



CPU EXTERNAL WIRING

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PLC-CPU-CM2-BP Series



Main Block Options

Model	Power	Input		Output		Comm. Option	
PLC-CPU-CM2-BP32MDTA	100 ~ 240 VAC	16	24 VDC	16	TR (Sink)	R: RS232C S: RS422/485 E: Ethernet (10M) U: RS422/485 2 Ch. T: RS232C 1 Ch.	
PLC-CPU-CM2-BP32MDCA					TR (Source)		
PLC-CPU-CM2-BP32MDRA					Relay		
PLC-CPU-CM2-BP32MDTD	TR (Sink)				24 VDC		TR (Source)
PLC-CPU-CM2-BP32MDCD	Relay						
PLC-CPU-CM2-BP32MDRD							
PLC-CPU-CM2-BP16MDTA	100 ~ 240 VAC	8	24 VDC	7	TR (Sink)	R: RS232C S: RS422/485	
PLC-CPU-CM2-BP16MDCA					TR (Source)		
PLC-CPU-CM2-BP16MDRA					Relay		
PLC-CPU-CM2-BP16MDTD	TR (Sink)				24 VDC		TR (Source)
PLC-CPU-CM2-BP16MDCD	Relay						
PLC-CPU-CM2-BP16MDRD							

PLC-CPU-CM2-BP 32 M D T A R C

I/O Points		Module Type		Input Type		Output Type		Power Type		Communication Type		Real Time Clock	
16		M	Main	D	Digital	T	Transistor (Sinking)	A	100 ~ 240 VAC	R	RS232C	C	RTC
32		A	Mixed			C	Transistor (Sourcing)	D	24 VDC	S	RS422/485		
						R	Relay			U	2 RS422/485 Ch.		
										E	Ethernet (10M)		
										T	1 RS232C Ch.		

Mixed Block Options

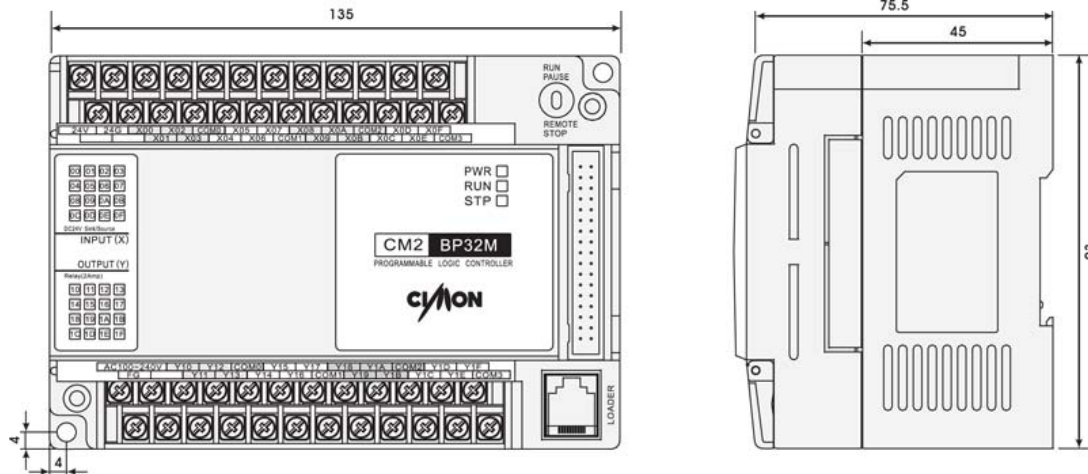
Model	Power	Input		Output		Analog	Comm. Option
PLC-CPU-CM2-BP32ADRA	100 ~ 240 VAC	8	24 VDC	8	Relay	2 AI Ch. (Voltage/ Current)	R: RS232C S: RS422/485 E: Ethernet (10M) U: RS422/485 2 Ch. T: RS232C 1 Ch.
PLC-CPU-CM2-BP32ADTA					TR (Sink)		
PLC-CPU-CM2-BP32ADCA					TR (Source)		
PLC-CPU-CM2-BP32ADRD	24 VDC				Relay	2 AO CH. (Voltage/ Current)	
PLC-CPU-CM2-BP32ADTD					TR (Sink)		
PLC-CPU-CM2-BP32ADCD					TR (Source)		
PLC-CPU-CM2-BP32BDRA	100 ~ 240 VAC				Relay	2 RTD Ch.	
PLC-CPU-CM2-BP32BDTA					TR (Sink)		
PLC-CPU-CM2-BP32BDCA					TR (Source)		
PLC-CPU-CM2-BP32BDRD	24 VDC				Relay	2 AO Ch. (Voltage/ Current)	
PLC-CPU-CM2-BP32BDTD					TR (Sink)		
PLC-CPU-CM2-BP32BD CD					TR (Source)		

PLC-CPU-CM2-BP 32 A D R A R C

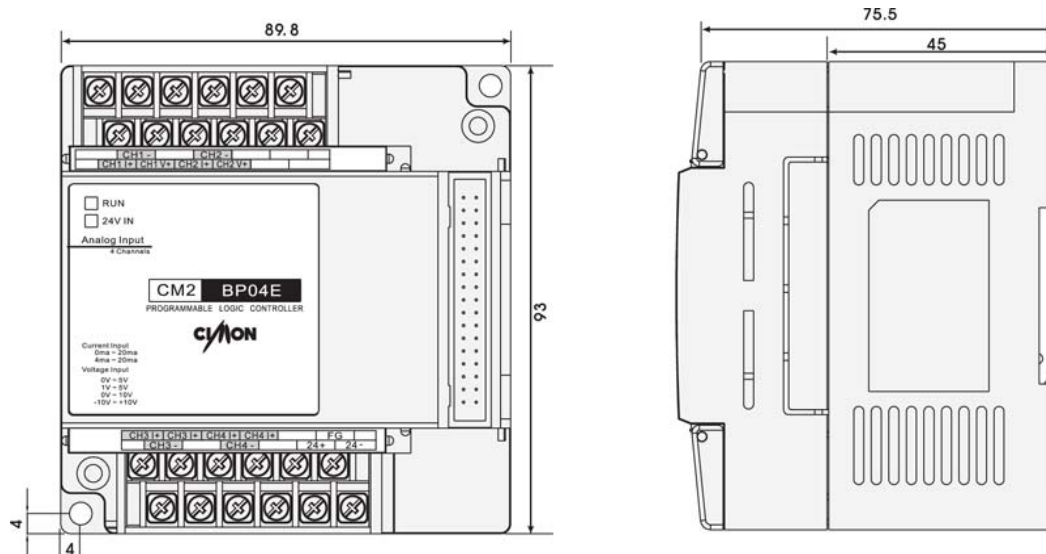
I/O Points		Module Type		Input Type		Output Type		Power Type		Communication Type		Real Time Clock	
16		M	Main	D	Digital	T	Transistor (Sinking)	A	100 ~ 240 VAC	R	RS232C	C	RTC
32		A	Mixed			C	Transistor (Sourcing)	D	24 VDC	S	RS422/485		
						R	Relay			U	2 RS422/485 Ch.		
										E	Ethernet (10M)		
										T	1 RS232C Ch.		

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PLC-CPU-CM2-BP32



PLC-CPU-CM2-BP16



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*All units are in mm