

PLC-S PLUS



PLC-S Plus CPU

The PLC-S Plus CPU offers ultra-fast processing, extended operating temperature (-20 to +70°C), and secure DIN rail mounting for easy installation. With support for up to 15 expansion modules and 512 I/O points, it's built for scalable, high-performance automation and reliability.

CM3-SP16PDRF

CM3-SP32PDCF

CM3-SP32PDTF

Product Highlights

- Class 1, Division 2 Rating*
- Extended operating temperature: -20 to +70 °C
- Under 20ns processing speed
- Easy and secure DIN rail mounting
- Add up to 15 PLC expansion modules
- Up to 512 I/O
- Dual ethernet ports
- 24V DC power
- Easy access run/stop control
- Micro SD card reader
- USB-C loading port
- RS232/RS422/485 serial ports
- Push terminal type
 - SP32PDCF: 16 DI (SINK&SOURCE) & 16 DO (SOURCE)
 - SP32PDTF: 16 DI (SINK&SOURCE) & 16 DO (SINK)
 - SP16PDRF: 8 DI (SINK&SOURCE) & 8 DO (RELAY)
- Supported Protocols:
 - EtherNet/IP Server
 - EtherCAT*
 - Modbus TCP/RTU Master/Slave
 - Profinet (Slave)*
 - MQTT*

*Available 2025



Compact



Simple



Fast



Smart

Part Number		CM3-SP32PDTF	CM3-SP32PDCF	CM3-SP16PDRF
Power Supply		12-24 VDC, 0.58 A, Tolerance : -5%, +10%		
Power Consumption		4.8W (MAX: 23.9W)	4.8W (MAX: 23.8W)	5.7W (MAX: 26.5W)
Program Control Method		Cyclic Execution, Time Driven Interrupt, Stored Program		
Total Data Memory (words)		243,989 (Device 64,789, Global Var 179,200)		
User Data Memory		512KB(PLC Program : 128KStep) *ST program not included		
Inrush Current		30A Peak		
Permissible Instantaneous Power Failure Time:		50 ms		
Dielectric Strength	Between power and FE terminals	1,500V AC, 1 minute		
	Between output and FE terminals	3,000V AC, 1 minute		
	Between power and input terminals	3,000V AC, 1 minute		
	Between power and output terminals	3,000V AC, 1 minute		
	Between input and output terminals	500V AC, 1 minute	3,000V AC, 1 minute	
Insulation Resistance	Between power and FE terminals	100MΩ or higher (1,000V DC megger)		
	Between output and FE terminals	100MΩ or higher (1,000V DC megger)		
	Between power and input terminals	100MΩ or higher (1,000V DC megger)		
	Between power and output terminals	100MΩ or higher (1,000V DC megger)		
	Between input and output terminals	100MΩ or higher (1,000V DC megger)		
I/O Control Method		I/O Refresh, Directed by program instruction		
Program Language		IL (Instruction List), LD (Ladder Diagram), SFC (Sequential Function Chart), FBD (Function Block Diagram), FBD Extension, ST (Structured Text)		
Data Processing Method		32-bit (4 Bytes)		
Instructions	Sequence	60		
	Application	480		
Processing Speed	LD	16 ns/Step		
	MOV	33 ns/Step		
	Floating-point Arithmetic	+, -, x, / : 41 ns/Step		
Floating-Point Arithmetic		Supporting instructions for floating-point arithmetic		

Number of Program Blocks		Maximum 128 blocks
Max Expansion Blocks		CPU + Max 15 expansion blocks
Operation Mode		Remote Run, Remote Stop
Periodic Interruption		Maximum 15, cycle setting (1–60,000 ms, Unit: 1 ms), priority setting (0–14)
Data Preservation Against Power Failure:		K device and retention (Latch) in M, L, T, C, S, D device Devices that use “Retain” option in Global Variable
Watch Dog Timer (WDT)		10–10000 ms (Unit: 10 ms)
Restarting		Cold, Hot Restart
Timer		Cycle: 0.01 s–6,553.5 s (Either 10 or 100 ms) On Delay, Addition, Monostable, Retriggerable
Counter		Counter range: -32,768–32,767 Up Counter, Down Counter, Up-Down Counter, Ring Counter
PID		64 Channels, Auto-Tuning
Comm. Channels	USB	USB 2.0 (C type): For Loader Protocol
	Serial	RS-232C (Max 115,200 bps), RS-485 (Max 115,200 bps) 1 port each CICON Loader, CIMON-HMI, Modbus RTU Master/Slave
	Ethernet	10/100/1000Base-T/TX 2 ports CICON Loader, CIMON-HMI, Modbus TCP Master/Slave
Event Log		Max 100 logs (Power, Mode, Error)
Etc.		I/O Reservation, RTC, Online Edit Option: SD/MMC Slot
Capacity of Scan Program		128k steps
RAM Backup		Backup Data: Program, Parameter, Latch data, Global var, clock data
RTC	Battery	Lithium primary battery (CR2032)
	Battery Life	Approx. 8 years
	Replacability	Possible
Memory Card	Spec.	SD Memory Card: FAT32, 32 GB
	Function	Firmware up/down grade, Program download, Device Memory Backup
Device Memory	X	8192
	Y	8192
	M	65536
	L	65536
	K	65536
	F	2048
	T	4096
	C	4096
	S	100*100 Steps
	D	32767 Words (524,272)
	Z	1024 Words
	Q	512 Words
R	16 Words (Index)	

Functional (cont.)

Input Filter	3 to 200ms (selectable in increments of 1ms)
Subroutines	Yes
For/Next Loops	Yes
Math (Integer and Hex)	Yes
Self-Diagnosis	Monitoring process delay, WDT (Detects delay of scan time), Memory error, I/O error, Low Battery Power ON/OFF Status
Password Security	Yes

Internal I/O Specifications

Item	Specification	
Input Voltage Range	24V, Tolerance : +20%	
Rated I/O Voltage	DC Input	24 VDC
	Relay Output	250 VAC, 24 VDC
	TR Output	12 VDC, 24 VDC
Rated I/O Current	DC Input	4 mA
	Relay Output	1 point 2A, COM 5A
	TR Output	1 point 0.2A, COM 2A
On V/A	DC Input	19 VDC, 3 mA
Off V/A	DC Input	6 VDC, 1 mA
Response Time	DC Input	3 ms or less
	Relay Output	10 ms or less
	TR Output	1 ms or less
Operation Indicator	DC Input	Input ON, LED ON
	Relay Output	Input ON, LED ON
	TR Output	Input ON, LED ON
Insulation Method	DC Input	Photocoupler insulation
	Relay Output	Relay insulation
	TR Output	Photocoupler insulation
Input Method	DC Input	Sink/Source
Output Method	Relay Output	Relay
	TR Output	Sink/Source
Minimum Load Current	1 mA @ 5VDC	
Input Impedance	6.45kΩ	
Polarity Protection	Power input is reverse polarity protected	

Environmental

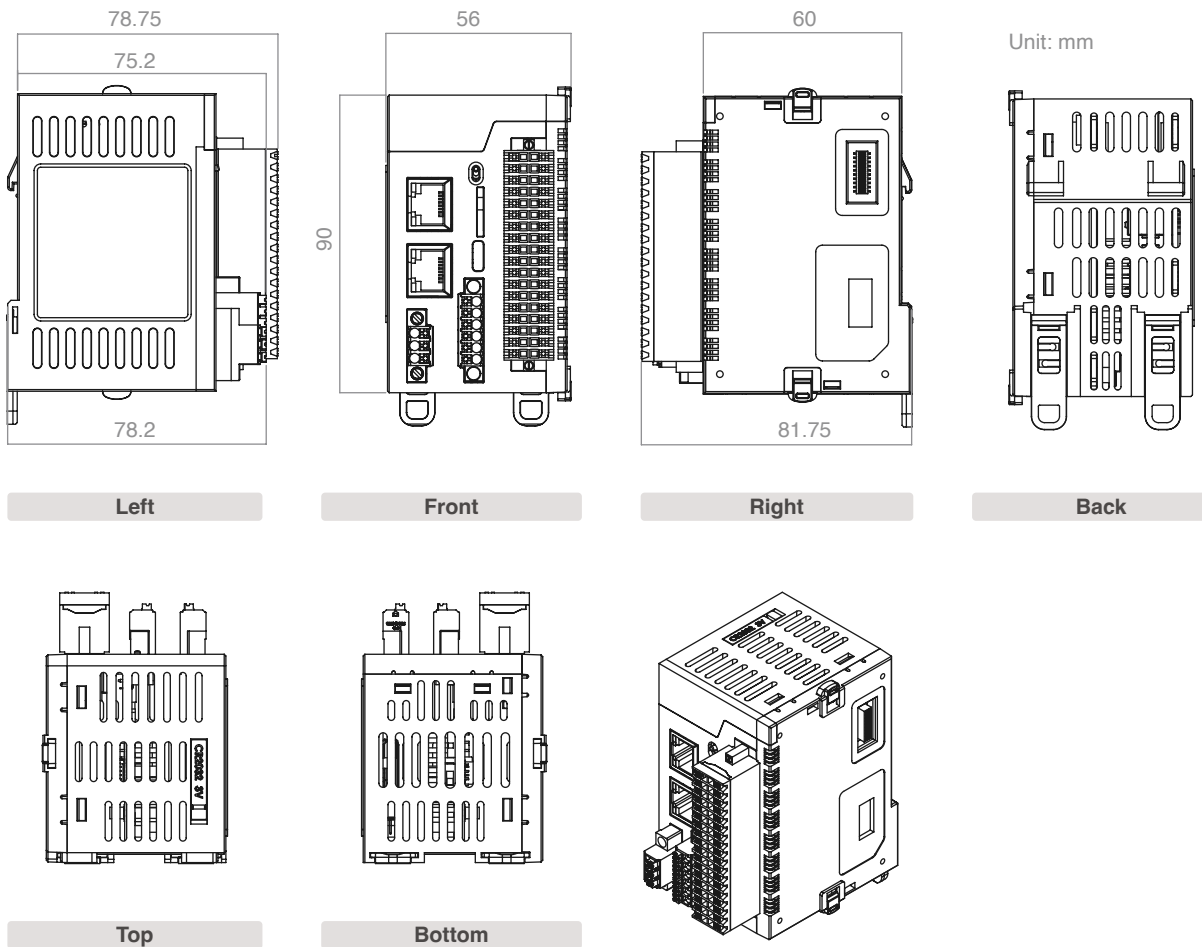
Item	Specification	Standards			
Operating Temperature	-20 – +70 °C (+14 – +149 °F)	-			
Storage Temperature	-25 – +80 °C (-13 – +176 °F)	-			
Operating / Storage Relative Humidity	5 – 95%RH, Non-condensing	-			
Vibration	Discontinuous				IEC 61131-2
	Frequency	Acceleration	Amplitude	Times	
	5 ≤ f < 9 Hz	-	3.5mm	10 times in X, Y, Z	
	9 ≤ f ≤ 150 Hz	9.8 m/s ² (1G)	-		
	Continuous				
	Frequency	Acceleration	Amplitude	Times	
	5 ≤ f < 9 Hz	-	1.75mm	10 times in X, Y, Z	
9 ≤ f ≤ 150 Hz	4.9 m/s ² (0.5G)	-			
Shock	<ul style="list-style-type: none"> • Max. impact acceleration: 147 m/s² (15G) • Authorized time: 11 ms • Pulse wave: Sign half-wave pulse (3 times each in X,Y,Z) 	IEC 61131-2			
Square Wave Impulse Noise	±2 kV	CIMON Standard			
ESD Immunity	±4 kV - Contact Discharges ±8 kV - Air Discharges	IEC 61131-2 IEC 61000-4-2			
Radiated Electromagnetic Immunity	80–1000 MHz, 10 V/m	IEC 61131-2 IEC 61000-4-3			
Surge Transient Immunity	2 kV - CPU, Power 2 kV - Discrete I/O (VAC) 1 kV - Discrete I/O (VDC) 1 kV - Communication	IEC 61131-2 IEC 61000-4-4			
Environmental Conditions	No corrosive gas and no dust	-			
Altitude	2,000 m or less	-			
Pollution	Pollution Degree 2 or less	-			
Cooling	Natural Air Cooling	-			
Emissions	-	EN IEC 61000-6-4:2019			

Physical

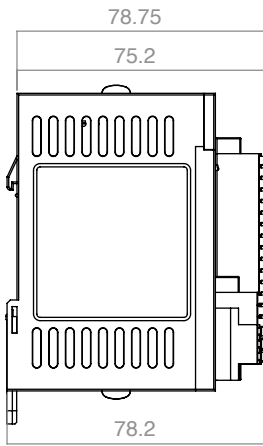
Part Number	CM3-SP32PDTF	CM3-SP32PDCF	CM3-SP16PDRF
Dimensions	90 x 56 x 60 mm (3.5 x 2.2 x 2.4 in)		
Weight	180 g (0.40 lb)		190g (0.42 lb)
Mounting	DIN rail		

Spec Drawings

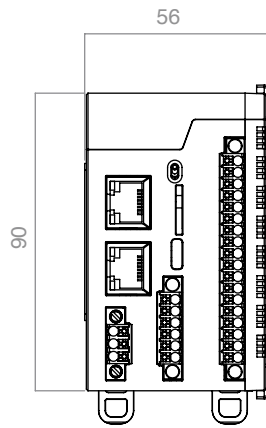
CM3-SP32PDRF, CM3-SP32PDCF



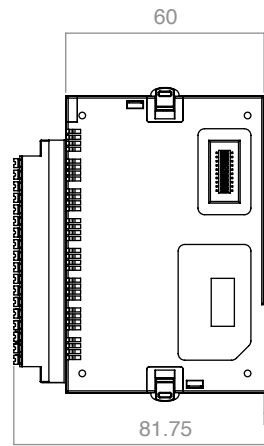
CM3-SP16PDRF



Left

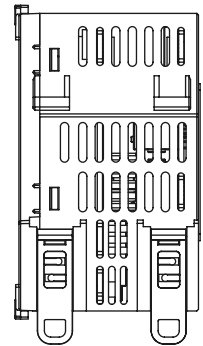


Front

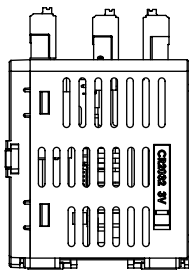


Right

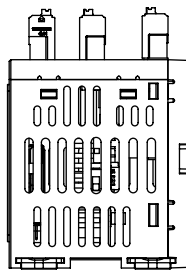
Unit: mm



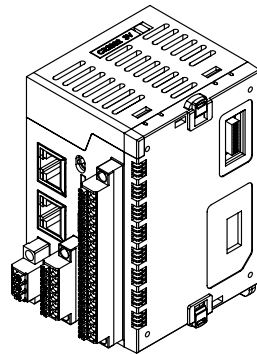
Back



Top



Bottom



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sales@cioninc.com
+1(800)300-9916

All CIMON products are backed by a 3-year warranty and our best-in-class technical support team.