PLC-S KEY FEATURES

CIMON PLC-S provides high reliability and expandability with various network modules, allowing easy maintenance of process control systems.

SLIM

- Slim, without compromising strong performance
- Special instructions, programs, and function blocks available
- Supports flexible expansion

SIMPLE

- Easy to install with simple design
- Optimized usage of space with its compact size
- DIN rail mountable

SPEED

- Max. 32 PID loop control
- Equipped with 16Kpps high-speed counter

SMART

- 2 axes motion control
- Supports floating point arithmetic
- Automatically recognizes protocols

CPU PERFORMANCE

PLC-S CPU

Model	Input	Output	RS-232C	RS485	Ethernet
CM3-SP32MDTF-SD	16pts	TR (Sink) Output 16pts	Y	Y	Y
CM3-SP32MDCF-SD	16pts	TR (Source) Output 16pts	Y	Y	Y
CM3-SP16MDRV	8pts	Relay type 8pts	Y	Y	N
CM3-SP16MDRF		Relay type 6pts			Y

(No expansion possible with Brick Type cpu)

Type	Module	Description
Digital I/O Module	CM3-SP32EDO	DC24V Input 32 pts
	CM3-SP32EOT/EOC	TR (Sink) Output 32 pts
	CM3-SP16EOR	DO 16 pts (Relay) / expandable up to 4 modules
	CM3-SP32EDT	DI 16 pts (DC24V), DO 16 pts (TR(SINK))
	CM3-SP16EDR	DI 8 pts (DC24V), DO 8 pts (Relay)
Analog Module	CM3-SP04EAO	4 ch for current / voltage input, 14bit
	CM3-SP04EAA	2ch for current / voltage input + 2 ch for current / voltage Output, option for 16 bit or 14 bit
	CM3-SP04EOAI	4 ch for current output, 14bit
	CM3-SP04EOAV	4 ch for voltage output, 14bit
	CM3-SP04ERO	AI 4 ch RTD
	CM3-SP04ETO	AI 4 ch TC
Communication Module	CM3-SP01EET	Ethernet 1 ch, 10/100Mbps
	CM3-SP02ERS	RS232C 1 ch, RS485 1ch
	CM3-SP02ERR	RS232C 2 ch

CPU MODULE

• Specification

CM3-SP32MDTF-SD
CM3-SP32MDCF-SD

CM3-SP16MDRV
CM3-SP16MDRF

PLC-S CPU CM3-SP32MDTF I CM3-SP32MDCF I CM3-SP16MDRV/MDRF

Item		Description	Note
Power		DC12V~24V	-
Program Control		Repetitive operation, Time-driven interrupt	-
Method for Controlling Input/Output		Indirect method, Direct method by instruction	-
Program Language		IL (Instruction List), LD (Ladder Diagram), SFC (Sequential Function Chart) , FB (Function Block)	-
Data Processing		32 Bit	-
Instruction Library	Basic	55 Instructions	-
	Advanced	389 Instructions	-
Execution Processing Speed (Basic Instruction)		300 ns/Step	-
Program Memory		10k Step	-
Number of I/O Points		384 pts	-
Operating Modes		Remote Run, Remote Stop	-
Data Preservation Against Power Failure		Data storage and conservation (Latch) in K device	-
Number of Program Blocks		128	-
Type of Program	Scan	5 types including standard scan program, Subroutine, COLD / HOT initialization, periodic interrupts	-
	Periodic Interrupts	Ability to register up to 15 (Minimum period: 10ms)	-
	Special Configuration	6 types including PID control program	-
		High-Speed Counter, Positioning control, Input module filtering, Initializing special card	-
	Communication	8 types including user protocol (Serial) communication	-
		Modbus RTU Master/Slave, Modbus TCP Slave, User Protocol (Serial), High Speed PLC Link, CIMON HMI Protocol	-
	Etc.	SFC program, FBD (Function Block Diagram)	-
Self-diagnosis		Processing delays, memory issues, I/O / Battery / Power error	-
Restarting		COLD, HOT Restart	-
Expansion		1 CPU block + Maximum 11 expansion blocks	-
Memory Type	X	1024 pts (X0000-X063F)	Bit
	Y	1024 pts (Y0000-Y063F)	Bit
	M	8192 pts (M0000-M511F)	Bit
	L	4096 pts (L0000-L255F)	Bit
	K	4096 pts (K0000-K255F)	Bit
	F	2048 pts (F0000-F127F)	Bit
	T	512 pts (T0000-T0511)	Word
	C	512 pts (C0000-C0511)	Word
	S	100 states x 100 set (00.00-99.99)	-
	D	10000 words (D0000-D9999)	Word
	Z	1,024 words (Call Stack: Z0000-Z0063, Z1000-Z1063)	Word
	Q	8192 pts (Q0000-Q511F)	Bit
	R	16 pts (Index)	-

Item	Description	Note
High-speed Counter	Maximum count speed: 16kpps (Maximum 4kpps when using 2 phase 2 channels)	-
Positioning	X-axis: Position / Velocity control 100kpps	-
	Y-axis: Position control 5kpps, Velocity control 100kpps	-
PID	32 channels, Auto-Tuning	-
Real Time Clock (RTC)	Built-in battery (CR2032)	-
Communication Channel	[Basic] USB : 1 channel (CICON Loader) / RS-232-C : 1 channel (Universal communication)	-
	[Option (Universal communication)] RS485 : 1ch / Ethernet : 1 ch (10/100Mbps automatic identification)	-
Etc.	Real number arithmetic, modification of program during Run status	-

• Features

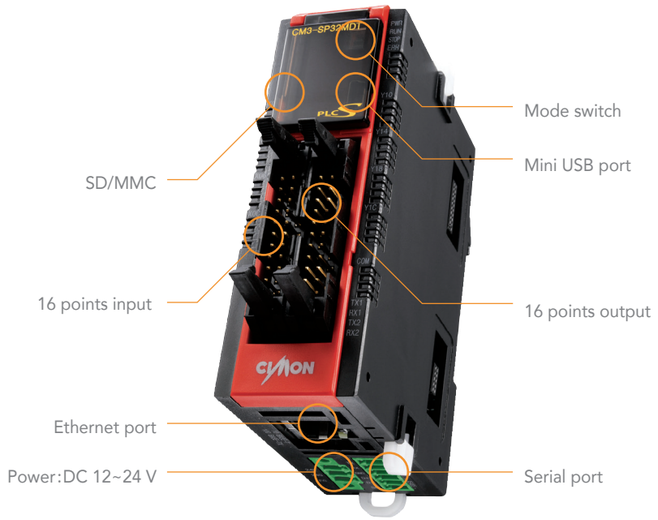
Built-in Functions

- PID Control
  - PID operation can be executed without an additional PID module.
- RTC
  - Reads the time from the RTC module and stores the value at an F device memory location.
- I/O Reservation
  - Checks if a correct card was mounted in the assigned slot. Additionally, when expanding or exchanging parts, addresses used by the program can be maintained without making changes to the I/O.
- Modification of program during RUN mode.
  - Program can be modified while PLC is in RUN mode.
- 2 channel high-speed counter
  - 16kpps Maximum count speed (Maximum 4kpps when using 2 phase 2 channels).
  - Photocoupler insulation.
- Positioning control by 2-axis pulse output at 100kpps
  - Supports pulse + direction output, Position, velocit, velocity – position, position-velocity control.

Characteristics

- Embedded SD/MMC memory
  - Scan program and firmware upgrades are available via SD memory card.
  - After installing the memory card, set the operation mode switch to STOP. Turn the operation mode switch to RUN within 5 seconds of powering up. The firmware upgrade will proceed for 20 seconds and will indicate completion when the LEDs (RUN, STOP, and ERR) are turned on. Remove the SD memory and restore the power.)
- Simultaneous communication via Ethernet and serial (RS-232, RS-485)
  - Supports various protocols such as CIMON HMI, MODBUS RTU/TCP, PLC Link, user protocol, and loader protocol.
  - Program upload/download and remote access is available.
- Large capacity for program data
  - 10k steps of program memory are available for scan programs.
- Preserving data during power outage
  - Since the internal memory is flash-based, no backup memory cards or batteries are needed.

CPU MODULE



TR output (DC Power) Sink type

Model	SP32MDTF-SD
Digital I/O	Digital input 16pts Digital output 16pts
Mini USB	Y
SD/MMC Card Slot	Y
RS-232-C 1 ch	Y
RS-485 1 ch	Y
Ethernet 1 ch	Y

TR output (DC Power) Source type

Model	SP32MDCF-SD
Digital I/O	Digital input 16pts Digital output 16pts
Mini USB	Y
SD/MMC Card Slot	Y
RS-232-C 1 ch	Y
RS-485 1 ch	Y
Ethernet 1 ch	Y

Relay Output (DC POWER)

Model	SP16MDRV	SP16MDRF
Digital I/O	Digital input 8pts Digital output 8pts	Digital input 8pts Digital output 6pts
Mini USB	Y	Y
SD/MMC Card Slot	N	N
RS-232-C 1 ch	Y	Y
RS-485 1 ch	Y	Y
Ethernet 1 ch	N	Y

CPU

Current Consumption

Type	Model	Current Consumption (Main Power)	Current Consumption (Auxiliary Power)	Maximum number of expansions
CPU	CM3-SP32MDTF-SD	3.12W	-	-
	CM3-SP32MDCF-SD	3.12W	-	-
	CM3-SP16MDRV	3.12W	-	-
	CM3-SP16MDRF	3.6W	-	-
Digital Expansion Block	CM3-SP32EDO	0.48W	-	-
	CM3-SP32EOT	0.48W	-	-
	CM3-SP32EOC	0.48W	-	-
	CM3-SP32EOR	2.16W	-	4
Analog Expansion Block	CM3-SP04EAO	0.36W	1.44W	-
	CM3-SP04EAA	0.36W	1.68W	-
	CM3-SP04EOAI	0.36W	1.68W	-
	CM3-SP04EOAV	0.36W	1.44W	-
	CM3-SP04ERO	0.48W	0.72W	-
	CM3-SP04ETO	0.48W	0.72W	-
Communication Block	CM3-SP02ERR	0.48W	-	-
	CM3-SP02ERS	0.48W	-	-
	CM3-SP01EET	0.72W	-	5

- CM3-SP16EOR can be used with up to 4 modules. The required capacity of SMPS (Switched mode power supply) is 24VDC 20W.
- Please be sure to check each PLC-S module's current consumption to ensure that it does not exceed the 10W limit.
- Please make sure to check safety factor of the total power consumption when using SMPS.