



AFP7CPS31ES | FP7



※Photo may vary from actual product.

Product Number	AFP7CPS31ES
Part Number	AFP7CPS31ES
Product	FP7 CPU units
Details	Security enhanced type
Product name	FP7

Spec Detail

As of May 30, 2021

Specifications and design of the products are subject to change without notice for the product improvement.

Item	Specifications
Product Number	AFP7CPS31ES
Part Number	AFP7CPS31ES
[[Control specifications]]Memory capacity:Memory selection pattern1	Program (steps): 121,500 Data register (Note 1): 131,072 Number of max. program block (PB): 243 (Note) The factory default setting is pattern 1. (Note 1) For data register (DT), data up to 262,144 words can be backed up.
[[Control specifications]]Memory capacity:Memory selection pattern2	Program (steps): 96,000 Data register (Note) : 262,144 Number of max. program block (PB): 192 (Note) For data register (DT), data up to 262,144 words can be backed up.
[[Control specifications]]Memory capacity:Memory selection pattern3	Program (steps): 64,000 Data register (Note) : 425,984 Number of max. program block (PB): 128 (Note) For data register (DT), data up to 262,144 words can be backed up.
[[Control specifications]]Memory capacity:Memory selection pattern4	Program (steps): 32,000 Data register (Note) : 589,824 Number of max. program block (PB): 64 (Note) For data register (DT), data up to 262,144 words can be backed up.
[[Control specifications]]Programming method	Relay symbol method
[[Control specifications]]Control method	Cyclic operation method
[[Control specifications]]Program memory	Built-in flash ROM (no backup battery required)
[[Control specifications]]Operation speed	Basic instruction: min. 11 ns/step
[[Control specifications]]External input (X)	8,192 points (Note) Hardware configuration governs the actually usable number of I/O points. When I/O points are not actually used, usable as internal relays.
[[Control specifications]]External output (Y)	8,192 points (Note) Hardware configuration governs the actually usable number of I/O points. When I/O points are not actually used, usable as internal relays.
[[Control specifications]]Internal relay (R)	32,768 points
[[Control specifications]]System relay (SR)	Indicate operation status of various relays is shown.
[[Control specifications]]Link relay (L)	16,384 points

[[Control specifications]]Timer (T)	4,096 points: Timer capable of counting (units: 10 micro s, 1 ms, 10 ms, 100 ms or 1 sec.) x 4,294,967,295
[[Control specifications]]Counter (C)	1,024 points, Counter capable of counting 1 to 4,294,967,295
[[Control specifications]]Link data register (LD)	16,384 words
[[Control specifications]]System data register (SD)	Internal operation status of various registers is shown.
[[Control specifications]]Index register (I0 to IE)	15 long words / With switching function
[[Control specifications]]Master control relay (MCR)	Unlimited
[[Control specifications]]Number of labels (LOOP)	Max. 65,535 points for each program block (PB)
[[Control specifications]]Differential points	Unlimited
[[Control specifications]]Number of step ladders	Unlimited
[[Control specifications]]Number of subroutines	Max. 65,535 points for each program block (PB)
[[Control specifications]]Number of interrupt program	1 periodical interrupt program
[[Control specifications]]SD memory card function	SDHC memory cards of up to 32 GB are usable.
[[Control specifications]]Constant scan	Available (0 to 125 ms)
[[Control specifications]]Clock / calendar	Year (last two digits), month, day, hours (24-hour display) minutes, seconds, day of week (Note) Precision of calendar; At 0 °C +32 °F , 95 sec. or less error per month, at +25 °C +77 °F , 15 sec. or less error per month, at +55 °C +131 °F , 130 sec. or less error per month
[[Control specifications]]Battery life (Value applies when no power is supplied at all.)	3.3 years or more (when no power is supplied) actual usage value: 20 years approx. (at 25 degrees 77 degrees Fahrenheit)
[[Control specifications]]Safety function	Password / Restricted distribution / Read disable setting / Encryption
[[Control specifications]]PLC link function (Serial communication / MEWNET-W0)	Max. 16 units, link relays: 1,024 points, link registers: 128 words. (Data transfer and remote programming are not supported) (Link area allocation is switchable between the first and the second half)
[[Communication specifications for COM port]]Interface	RS-232C, three-wire system, 1 channel (Note) SD, RD and SG terminals are isolated from internal circuits.
[[Communication specifications for COM port]]Transmission distance	15 m 49.213 ft
[[Communication specifications for COM port]]Transmission speed	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400 bits/sec,
[[Communication specifications for COM port]]Communication method	Half-duplex system
[[Communication specifications for COM port]]Synchronous method	Start-stop synchronization system
[[Communication specifications for COM port]]Transmission format	Stop bit: 1 bit / 2 bits Parity: none / odd / even Data length: 7 bits / 8 bits Start code: with STX / without STX End code: CR / CR + LF / none / ETX
[[Communication specifications for COM port]]Data transmission order	Transmit from bit 0 in character units.
[[Communication specifications for COM port]]Connection	General-purpose communication, Computer link and MODBUS-RTU
[[Dedicated power supply output port specifications for GT series programmable display]]Terminal:5V	For 5 V DC type GT series Programmable Display (Note) 5 V and 24 V DC types are not usable at the same time.

[[Dedicated power supply output port specifications for GT series programmable display]]Terminal:24V	For 24 V DC type GT series Programmable Display (Note 1) 5 V and 24 V DC types are not usable at the same time. (Note 2) Use 21.6 to 26.4 V DC to power the CPU unit. Please check the "GT Series Hardware Manual" for grounding of the GT series programmable display.
[[LAN communication port specifications]]Communication interface	Ethernet 100BASE-TX / 10BASE-TX
[[LAN communication port specifications]]Communication speed	100 Mbps, 10 Mbps auto negotiation function
[[LAN communication port specifications]]Total cable length	100 m 328 ft (500 m 1,640 ft when a repeater is used)
[[LAN communication port specifications]]Number of nodes	Max. 254 units
[[LAN communication port specifications]]Number of simultaneous connections	Max. 220 connections (user connection: 216, system connection: 4)
[[LAN communication port specifications]]Communication protocol (Communication layer)	TCP / IP, UDP
[[LAN communication port specifications]]DNS	Supports name servers
[[LAN communication port specifications]]DHCP / DHCPV6	Automatic IP address acquisition
[[LAN communication port specifications]]FTP server / Client (SSL compatible)	Server function, file transfer, number of user: 3 Client function, data and file transfer
[[LAN communication port specifications]]HTTP server / Client (SSL compatible)	Server function, system web, Customer web (8 MB), number of concurrent session: 16 Client function, data transfer
[[LAN communication port specifications]]SMTP client (SSL compatible)	Client function, mail transfer
[[LAN communication port specifications]]SNTP	Time adjustment function
[[LAN communication port specifications]]General-purpose communication	16 kB / 1 connection (user connection: 1 to 16)
[[LAN communication port specifications]]Dedicated communication	Slave communication (MEWTOCOL-COM, MEWTOCOL7-COM, MEWTOCOL-DAT, MODBUS-TCP, MC protocol (Note)) Master communication (MEWTOCOL-COM, MEWTOCOL-DAT, MODBUS-TCP, MC protocol (Note)) (Note): MC protocol is a short form denoting MELSEC communication protocol; MELSEC is a registered trademark of Mitsubishi Electric Corporation. QnA compatible 3E frame, only binary (bulk writing and bulk reading) use is available.
[[Common general specifications]]Ambient temperature	0 to +55 °C +32 to +131 °F, Storage: -40 to +70 °C -40 to +158 °F
[[Common general specifications]]Ambient humidity	10 to 95 % RH (at +25 °C +77 °F, no condensation), Storage: 10 to 95 % RH (at +25 °C +77 °F, no condensation)
[[Common general specifications]]Breakdown voltage	500 V AC for 1 minute
[[Common general specifications]]Insulation resistance	100 MOhm or more (at 500 V DC)
[[Common general specifications]]Vibration resistance	5 to 8.4 Hz, single amplitude of 3.5 mm 0.138 in, 1 sweep/min. (IEC 61131-2) ; 8.4 to 150 Hz, constant acceleration of 9.8 m/s ² , 1 sweep/min. (IEC 61131-2), 10 times each in X, Y, and Z directions
[[Common general specifications]]Shock resistance	147 m/s ² or more , 3 times each in X, Y, and Z directions (IEC61131-2)
[[Common general specifications]]Noise immunity	1,000 V [p-p] with pulse width 50 ns and 1 micro s (using a noise simulator)
[[Common general specifications]]Operating condition	Free from corrosive gasses and excessive dust
[[Individual general specifications]]Rated voltage range	20.4 to 28.8 V DC

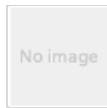
[[Individual general specifications]]Current consumption

200 mA or less

[[Individual general specifications]]Net weight

220 g approx. (with terminal block and end unit)

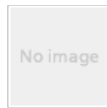
Accessories



Product Number **AFP2801**

Part Number **AFP2801**

Product name **Discrete-wire connector set**



Product Number **AFP2802**

Part Number **AFP2802**

Product name **Flat cable connector set**



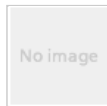
Product Number **AFP7AD4H**

Part Number **AFP7AD4H**

Product **FP7 Analog Input and Output units**

Details **FP7 Analog Input unit (High-speed and high-accuracy type)**

Product name **FP7 Analog Input and Output units**



Product Number **AFP7AD8**

Part Number **AFP7AD8**

Product name **FP7 Analog Input and Output units**



Product Number **AFP7CCET1**

Part Number **AFP7CCET1**

Product **FP7 Add-on cassettes (communication cassettes)**

Product name **FP7 Add-on cassettes**



Product Number **AFP7CCM1**

Part Number **AFP7CCM1**

Product **FP7 Add-on Cassettes**

Details **Communication Cassettes**

Product name **FP7 Add-on cassettes**



Product Number **AFP7CCM2**

Part Number **AFP7CCM2**

Product **FP7 Add-on Cassettes**

Details **Communication Cassettes**

Product name **FP7 Add-on cassettes**



Product Number **AFP7CCS1**

Part Number **AFP7CCS1**

Product **FP7 Add-on Cassettes**

Details **Communication Cassettes**

Product name **FP7 Add-on cassettes**



Product Number **AFP7CCS1M1**

Part Number **AFP7CCS1M1**

Product **FP7 Add-on Cassettes**

Details **Communication Cassettes**

Product name **FP7 Add-on cassettes**



Product Number **AFP7CCS2**

Part Number **AFP7CCS2**

Product **FP7 Add-on Cassettes**

Details **Communication Cassettes**

Product name **FP7 Add-on cassettes**



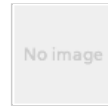
Product Number **AFP7DA4H**

Part Number **AFP7DA4H**

Product **FP7 Analog Input and Output units**

Details **FP7 Analog Output unit (High-speed and high-accuracy type)**

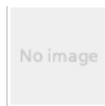
Product name **FP7 Analog Input and Output units**



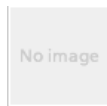
Product Number **AFP7END**

Part Number **AFP7END**

Product name **FP7 End unit**



Product Number	AFP7EXPM
Part Number	AFP7EXPM
Product name	FP7 Expansion unit



Product Number	AFP7EXPS
Part Number	AFP7EXPS
Product name	FP7 Expansion unit



Product Number	AFP7FCA21
Part Number	AFP7FCA21
Product	FP7 Add-on cassettes (function cassettes)
Product name	FP7 Add-on cassettes (function cassettes)



Product Number	AFP7FCAD2
Part Number	AFP7FCAD2
Product	FP7 Add-on cassettes (function cassettes)
Product name	FP7 Add-on cassettes (function cassettes)



Product Number	AFP7FCTC2
Part Number	AFP7FCTC2
Product	FP7 Add-on cassettes (function cassettes)
Product name	FP7 Add-on cassettes (function cassettes)



Product Number	AFP7HSC2T
Part Number	AFP7HSC2T
Product	FP7 High-speed Counter Units
Product name	FP7 High-speed Counter



Product Number	AFP7HSC4T
Part Number	AFP7HSC4T
Product	FP7 High-speed Counter Units
Product name	FP7 High-speed Counter



Product Number	AFP7MC16EC
Part Number	AFP7MC16EC
Product	FP7 Motion Control Unit
Details	EtherCAT type
Product name	FP7 Motion control unit



Product Number	AFP7MC32EC
Part Number	AFP7MC32EC
Product	FP7 Motion Control Unit
Details	EtherCAT type
Product name	FP7 Motion control unit



Product Number	AFP7MC64EC
Part Number	AFP7MC64EC
Product	FP7 Motion Control Unit
Details	EtherCAT type
Product name	FP7 Motion control unit



Product Number	AFP7MW
Part Number	AFP7MW
Product	Multi-wire link unit
Product name	FP7 Multi-wire link unit



Product Number	AFP7MX32DWD
Part Number	AFP7MX32DWD
Product	FP7 Multi Input/Output Units
Product name	Multi input/output unit

Discontinued



Product Number	AFP7MX32DWDH
Part Number	AFP7MX32DWDH
Product	FP7 Multi Input/Output Unit
Details	Positioning type
Product	Multi input/output


















Product Number	AFP7NSC
Part Number	AFP7NSC
Product	FP7 Serial communication unit
Product name	FP7 Serial communication unit










Product Number	AFP7PG02L
Part Number	AFP7PG02L
Product	FP7 Pulse output units
Product name	FP7 Pulse output units

name unit

Product Number **AFP7PG02T**Part Number **AFP7PG02T**Product **FP7 Pulse output units**Product name **FP7 Pulse output units**Product Number **AFP7PG04L**Part Number **AFP7PG04L**Product **FP7 Pulse output units**Product name **FP7 Pulse output units**Product Number **AFP7PG04T**Part Number **AFP7PG04T**Product **FP7 Pulse output units**Product name **FP7 Pulse output units**Product Number **AFP7PHLSM**Part Number **AFP7PHLSM**Product **FP7 PHLS (Remote I/O) unit**Details **PHLS Master unit**Product name **FP7 PHLS (Remote I/O) unit**Product Number **AFP7PP02L**Part Number **AFP7PP02L**Product **FP7 Positioning units**Product name **FP7 Positioning units**Product Number **AFP7PP02T**Part Number **AFP7PP02T**Product **FP7 Positioning units**Product name **FP7 Positioning units**Product Number **AFP7PP04L**Part Number **AFP7PP04L**Product **FP7 Positioning units**Product name **FP7 Positioning units**Product Number **AFP7PP04T**Part Number **AFP7PP04T**Product **FP7 Positioning units**Product name **FP7 Positioning units**Product Number **AFP7PSA1**Part Number **AFP7PSA1**Product **FP7 Power supply units**Product name **FP7 Power supply units**Product Number **AFP7PSA2**Part Number **AFP7PSA2**Product **FP7 Power supply units**Product name **FP7 Power supply units**Product Number **AFP7RTD8**Part Number **AFP7RTD8**Product **FP7 Temperature input units**Product name **FP7 Temperature input units**Product Number **AFP7TC8**Part Number **AFP7TC8**Product **FP7 Temperature input units**Product name **FP7 Temperature input units**Product Number **AFP7X16DW**Part Number **AFP7X16DW**Product **FP7 Input and Output Units**Details **Input units**Product name **FP7 Input and Output units**Product Number **AFP7X32D2**Part Number **AFP7X32D2**Product **FP7 Input and Output Units**Details **Input units**Product name **FP7 Input and Output units**Product Number **AFP7X64D2**Part Number **AFP7X64D2**Product **FP7 Input and Output Units**Details **Input units**Product name **FP7 Input and Output units**Product **AFP7XY64D2P**Product **AFP7XY64D2T**Product **AFP7Y16P**

Number		Number		Number	
Part Number	AFP7XY64D2P	Part Number	AFP7XY64D2T	Part Number	AFP7Y16P
Product	FP7 Input and Output Units	Product	FP7 Input and Output Units	Product	FP7 Input and Output Units
Details	Input and Output units	Details	Input and Output units	Details	Output units
Product name	FP7 Input and Output units	Product name	FP7 Input and Output units	Product name	FP7 Input and Output units
					
Product Number	AFP7Y16R	Product Number	AFP7Y16T	Product Number	AFP7Y32T
Part Number	AFP7Y16R	Part Number	AFP7Y16T	Part Number	AFP7Y32T
Product	FP7 Input and Output Units	Product	FP7 Input and Output Units	Product	FP7 Input and Output Units
Details	Output units	Details	Output units	Details	Output units
Product name	FP7 Input and Output units	Product name	FP7 Input and Output units	Product name	FP7 Input and Output units
					
Product Number	AFP7Y64P	Product Number	AFP7Y64T	Product Number	AFP8503
Part Number	AFP7Y64P	Part Number	AFP7Y64T	Part Number	AFP8503
Product	FP7 Input and Output Units	Product	FP7 Input and Output Units	Product name	Motor Driver I/F Terminal II
Details	Output units	Details	Output units		
Product name	FP7 Input and Output units	Product name	FP7 Input and Output units		
					
Product Number	AFP8504	Product Number	AFP85100	Product Number	AFP85101
Part Number	AFP8504	Part Number	AFP85100	Part Number	AFP85101
Product name	Motor Driver I/F Terminal II	Product name	Connection cable for Posiotioning unit	Product name	Connection cable for Posiotioning unit
					
Product Number	AFP85151	Product Number	AFP85152	Product Number	AFPRP1X08D2
Part Number	AFP85151	Part Number	AFP85152	Part Number	AFPRP1X08D2
Product name	MINAS A4 series / A5 series Exclusive cable	Product name	MINAS A4 series / A5 series Exclusive cable	Product	FP7 PHLS (Remote I/O) unit
				Details	PHLS Slave units
				Product name	FP7 PHLS (Remote I/O) unit
					
Product Number	AFPRP1X16D2	Product Number	AFPRP1XY16D2T	Product Number	AFPRP1Y16T
Part Number	AFPRP1X16D2	Part Number	AFPRP1XY16D2T	Part Number	AFPRP1Y16T
Product	FP7 PHLS (Remote I/O) unit	Product	FP7 PHLS (Remote I/O) unit	Product	FP7 PHLS (Remote I/O) unit

Details	PHLS Slave units	Details	PHLS Slave units	Details	PHLS Slave units
Product name	FP7 PHLS (Remote I/O) unit	Product name	FP7 PHLS (Remote I/O) unit	Product name	FP7 PHLS (Remote I/O) unit
					
Product Number	AFPRP2X08D2E	Product Number	AFPRP2X16D2	Product Number	AFPRP2XY16D2T
Part Number	AFPRP2X08D2E	Part Number	AFPRP2X16D2	Part Number	AFPRP2XY16D2T
Product	FP7 PHLS (Remote I/O) unit	Product	FP7 PHLS (Remote I/O) unit	Product	FP7 PHLS (Remote I/O) unit
Details	PHLS Slave units	Details	PHLS Slave units	Details	PHLS Slave units
Product name	FP7 PHLS (Remote I/O) unit	Product name	FP7 PHLS (Remote I/O) unit	Product name	FP7 PHLS (Remote I/O) unit
					
Product Number	AFPRP2Y04R	Product Number	AFPRP2Y16T	Product Number	AFPSGR7ENS
Part Number	AFPRP2Y04R	Part Number	AFPRP2Y16T	Part Number	AFPSGR7ENS
Product	FP7 PHLS (Remote I/O) unit	Product	FP7 PHLS (Remote I/O) unit	Product name	Control FPWIN GR7
Details	PHLS Slave units	Details	PHLS Slave units		
Product name	FP7 PHLS (Remote I/O) unit	Product name	FP7 PHLS (Remote I/O) unit		
					
Product Number	AFPSGR7JPS	Product Number	AFPSGR7KRS	Product Number	AFSPR7AS
Part Number	AFPSGR7JPS	Part Number	AFPSGR7KRS	Part Number	AFSPR7AS
Product name	Control FPWIN GR7	Product name	Control FPWIN GR7	Product name	Control FPWIN Pro7
					
Product Number	AFPSWC	Product Number	AFPSWCKEY	Product Number	AXW7221FP
Part Number	AFPSWC	Part Number	AFPSWCKEY	Part Number	AXW7221FP
Product name	FP7	Product name	FP7	Product	Pressure contact for multi-wire
				Product name	Pressure contact for multi-wire
					
Product Number	AXW7231FP	Product Number	AXY52000FP	Product Number	SL-VFP7
Part Number	AXW7231FP	Part Number	AXY52000FP	Part Number	SL-VFP7
Product	Pressure contact for multi-wire	Product	Pressure contact tool	Product name	Flexible Wire-saving System S-LINK V
Product name	Pressure contact for multi-wire	Details	Multi-wire connector pressure contact tool		
		Product name	Pressure contact tool		

