

Operation speed:
320 ns

Maximum I/O points:
384 points

Program capacity:
32 k steps

Positioning:
network servo,
Max. 16 axes

Positioning:
pulse output 4 Mpps,
start up: 0.005 ms

High-performance ultra-compact PLC



Features

- Abundant program capacity: 32 k steps**
 The 32 k steps program capacity can accommodate an increase in the number of programs accompanying functionality enhancements, expansions, or changes of equipment.
- Equipped with an independent comment memory**
 All of 100,000 comments, 5,000 lines of block comments, and 5,000 lines of remark comments are saved in FPΣ together with programs.
- Equipped with a high-speed RISC processor**
 Equipped with a RISC processor, achieving high-speed processing with a scan time of less than 2 ms approx. for 5,000 steps
- High-speed positioning unit**
 The 4 Mpps maximum frequency and start up speed of 0.005 ms allow use for linear servo control.
- Simple temperature control**
 A temperature control program can be written in only one line by using the PID instruction F356 (EZPID), facilitating temperature control by a PLC, which had previously been considered difficult.

SPECIFICATIONS

Performance specifications

Item		Specifications			
		AFPG2543H / AFPG2543HTM	AFPG2643H / AFPG2643HTM	AFPG2423H / AFPG2423HTM	AFPG2653H / AFPG2653HTM
Number of controllable I/O points	Control unit	32 points (DC input: 16, NPN output: 16)	32 points (DC input: 16, NPN output: 16)	24 points (DC input: 16, relay output: 8)	28 points (DC input: 16, PNP output: 12)
	With FP0R expansion units	Max. 128 points (up to 3 units) * When using transistor output type expansion units	Max. 128 points (up to 3 units) * When using transistor output type expansion units	Max. 120 points (up to 3 units) * When using transistor output type expansion units	Max. 124 points (up to 3 units) * When using transistor output type expansion units
	With FPΣ expansion units	Not possible	Max. 288 points (up to 4 units) * When using transistor output type expansion units	Max. 280 points (up to 4 units) * When using transistor output type expansion units	Max. 284 points (up to 4 units) * When using NPN output type expansion units
	With FP0R and FPΣ expansion units	Max. 128 points * When using transistor output type expansion units	Max. 384 points * When using transistor output type expansion units	Max. 376 points * When using transistor output type expansion units	Max. 380 points * When using NPN output type expansion units
Programming method / Control method		Relay symbol / Cyclic operation			
Program memory		Built-in flash ROM (no backup battery required)			
Program capacity		32 k steps			
Number of instructions	Basic instructions	93 types			
	High-level instructions	216 types	218 types	216 types	218 types
Operation speed		Basic instruction: 0.32 μs min. / step			
Operation memory	Relay	Internal relay (R)	4,096 points: R0 to R255F (Note 1)		
		Timer / Counter (T / C)	1,024 points (Note 1, 2) [for initial setting, timer: 1,008 points (T0 to T1007), Counter: 16 points (C1008 to C1023)] Timer: Counts each unit up to 32,767 times (units: 1 ms, 10 ms, 100 ms, or 1 sec.). Counter: Counts 1 to 32,767		
	Memory area	Link relay (L)	2,048 points (Note 1)		
		Data register (DT)	32,765 words (DT0 to DT32764) (Note 1)		
	Link data register (LD)	256 words (Note 1)			
	Index register (I)	14 words (I0 to ID)			
Differential points		Unlimited			
Master control relay points (MCR)		256 points			
Number of labels (JP and LOOP)		256 points			
Number of step ladders		1,000 stages			
Number of subroutines		100 subroutines			
Pulse catch input		8 points (X0 to X7)			
Number of interrupt program		9 programs [8 external input points (X0 to X7), 1 periodical interrupt point (0.5 ms to 30 sec.)]			
Self-diagnosis function		E. g. watchdog timer, program syntax check			
Clock / calendar function		Year (last two digits), month, day, hour (24-hour display), minute, second and day of week (However, this function can only be used when a battery has been installed.) (Note 3)			
Potentiometer (volume) input		2 points, resolution: 10 bits (K0 to K1000)			
Battery life		220 days or more [actual usage value: 840 days approx. (25 °C 77 °F)]. Suggested replacement interval: 1 year. (Value applies when no power is supplied at all.)			
Comment storage		All kinds of comments, including I/O comments, remarks, and block comments, can be stored (no backup battery required).			
Link function		Computer link (1:1, 1:N) (Note 4), General-purpose communication (1:1, 1:N) (Note 4, 5), PLC link (Note 6)			
Other functions		Program edition during RUN, constant scan, forced on / off, password, floating-point operation, and PID			
Linear / Circular interpolation for positioning		Not available	Available	Not available	Available

Notes: 1) If no battery is used, only the fixed area is backed up (Counters 16 points: C1008 to C1023, Internal relays 128 points: R2480 to R255F, data registers 55 words: DT32710 to DT32764). When the optional battery is used, data can be backed up. Areas to be held and not held can be specified using the system registers. (Exclusive instructions allow writing and reading data in flash ROM.)

2) The number of points can be increased by using an auxiliary timer.

3) Precision of calendar timer: At 0 °C 32 °F, less than 119 seconds error per month, At 25 °C 77 °F, less than 51 seconds error per month, At 55 °C 133 °F, less than 148 seconds error per month

4) An optional communication cassette (RS232C type) is required in order to use 1 : 1 communication.

5) An optional communication cassette (RS485 type) is required in order to use 1 : N communication.

6) An optional communication cassette (RS485 type) is required.

•When the communication cassette is attached and it communicates, re-send processing is recommended.