

Positioning Modules

One of Q Series' strengths is the ability to integrate positioning directly onto your system. If a Q Series motion CPU is not required, the following modules provide a range of alternative positioning control capabilities in a range of formats.

Model Number		QD75P1N (*1) • QD75D1N	QD75P2N (*1) • QD75D2N	QD75P4N (*1) • QD75D4N
Stocked Item		-	S	S
Certification		UL • CE		
Number of Control Axes		1 axis	2 axes	4 axes
Interpolation Function		No	2-axis linear interpolation; 2-axis circular interpolation	2-, 3-, or 4-axis linear interpolation 2-axis circular interpolation
Control Unit		mm, inch, degree, pulse		
Backup		Parameters, positioning data, and block start data can be saved on flash ROM (battery-less backup).		
Positioning	Positioning System	PTP control: Incremental system/absolute system Speed-position switching control: Incremental system/absolute system (*2) Position-speed switching control: Incremental system Path control: Incremental system/absolute system		
	Position Range	In absolute system • -214748364.8 to 214748364.7 (m) • -21474.83648 to 21474.83647 (inch) • 0 to 359.99999 (degree) • -2147483648 to 2147483647 (pulse) In incremental system • -214748364.8 to 214748364.7 (m) • -21474.83648 to 21474.83647 (inch) • -21474.83648 to 21474.83647 (degree) • -2147483648 to 2147483647 (pulse) In speed-position switching control (INC mode) / position-speed switching control • 0 to 214748364.7 (m) • 0 to 21474.83647 (inch) • 0 to 21474.83647 (degree) • 0 to 2147483647 (pulse) In speed-position switching control (ABS mode) • 0 to 359.99999 (degree)		
	Speed Command	0.01 to 4000000.00 (mm/min); 0.001 to 2000000.000 (inch/min); 0.001 to 2000000.000 (degree/min); 1 to 4000000 (pulse/s)		
	Acceleration/Deceleration Process	Automatic trapezoidal acceleration/deceleration, S-pattern acceleration/deceleration		
	Acceleration/Deceleration Time	1 to 8388608 (ms) Four patterns can be set for each of acceleration time and deceleration time		
	Sudden Stop Deceleration Time	1 to 8388608 (ms)		
Protective Degree		IP2X		
External Wiring Connection System		40-pin connector		
Applicable Wire Size		0.3mm ² (AWG#22) or less (for A6CON1, A6CON4), AWG #24 (for A6CON2)		
Applicable Connector for External Devices		A6CON1, A6CON2, A6CON4 (Sold separately)		
Max. Output Pulse		QD75D1N, QD75D2N, QD75D4N: 4Mpps		
Max. Connection Distance Between Servos		QD75P1, QD75P2, QD75P4: 2m; QD75D1, QD75D2, QD75D4: 10m		
Online Module Change		Disabled		
I/O Device Points Occupied		32 points/slot (I/O assignment: intelligent)		
5VDC Internal Current Consumption		QD75P1N: 0.29A QD75D1N: 0.43A	QD75P2N: 0.30A QD75D2N: 0.45A	QD75P4N: 0.36A QD75D4N: 0.66A
Weight (kg)		0.15	0.15	0.16
Base Unit Slots Occupied		1		

Notes:

1. QD75P represents the open-collector output system, and QD75D represents the differential driver output system.
2. In speed-position switching control (ABS mode), the control unit available is "degree" only.

Positioning Module with Built-in Counter Function

Model Number		QD72P3C3
Stocked Item		-
Certification		UL • cUL • CE
Number of Control Axes		3 axes
Interpolation Function		No (Artificial linear interpolation by concurrent start is available)
Control Unit		Pulse
Backup		No
Positioning	Positioning System	PTP (Point to Point) control, speed control
	Position Range	-1073741824 to 1073741823 pulses
	Speed Command	1 to 100000 pulses/s (*1)
	Acceleration/Deceleration Process	Trapezoidal acceleration/deceleration
	Acceleration/Deceleration Time	1 to 5000 ms
External Wiring Connection System		40-pin connector
Applicable Connector for External Devices		A6CON1, A6CON2, A6CON4 (Sold separately)
Max. Output Pulse		100 kpps
I/O Device Points Occupied		32 points
5VDC Internal Current Consumption (A)		0.57
Weight (kg)		0.16
Base Unit Slots Occupied		1

Note 1: When the "speed limit value" setting is 100000 (pulse/s) (25-pulse units), set the "speed command" value in multiples of 25. If other values are set, the value will be change to a multiple of 25.

Positioning Module with Deviation Counter and D/A Counter

Model Number		QD73A1
Stocked Item		-
Certification		UL • cUL • CE
Number of Occupied I/O Points		48 points (I/O assignment: empty 16 points and intelligent 32 points)
Number of Control Axes		1 axis
Positioning Data	Capacity	1 data
	Setting Method	Sequence program
Positioning	Mode	Position control mode; Speed-position control switch mode
	System	Position control mode: Selectable from absolute system or incremental system; Speed-position control switch mode: Incremental system
	Position Command	-2147483648 to 2147483647 (pulse) (signed 32-bit binary)
	Speed Command	1 to 4000000 (pulse/s)
	Acceleration	Automatic trapezoidal acceleration/deceleration
	Automatic Accel/Decel Time	Acceleration time: 2 to 9999 (ms); Deceleration time: 2 to 9999 (ms)
	In-Position Range	1 to 20479 (pulse)
	Backlash Compensation	None
Error Correction Function		None
Speed Command Output		0 to ±10VDC (Adjustable to set in the range of ±5 to ±10VDC)
Positioning Feedback Pulse Input	Pulse Frequency	Open collector: 200kpulse/s; TTL: 200kpulse/s; Differential output: 1Mpulse/s
	Connectable Encoder Type	Open collector, TTL, or differential output
	Multiplication Setting	The number of input feedback pulses can be multiplied by 4, 2, 1, or 1/2
OPR Control		With OPR address change; An OPR method and OPR direction can be set through the intelligent function module switch setting
JOG Operation		JOG operation can be started by inputting a JOG start signal
M Function		None
Internal Current Consumption (5VDC)		0.52A
External Supply Voltage/Current Terminal Block		No external power supply
External Dimensions (H x W x D) mm		98 x 55.2 x 90
Weight (kg)		0.20
Starting Time (From a Start Request to Analog Output Start)		Absolute system: 1.2ms (same for two-phase trapezoidal positioning); Incremental system: 1.2ms (same for two-phase trapezoidal positioning); JOG operation: 1.2ms; OPR (near-point dog method): 1.2ms; OPR (count method): 1.2ms

Basic Positioning Control Modules

For applications not requiring the level of sophistication offered by our QD75P/D/M modules, consider the QD70P4 and P8 modules. These modules offer four and eight axis control from a single module. All basic motion control capabilities for non-coordinated axes are offered.

Model Number	QD70P4	QD70P8	
Stocked Item	S	S	
Certification	UL • cUL • CE	UL • cUL • CE	
Number of Control Axes	4 axes	8 axes	
Interpolation Function No			
Control Method PTP (Point To Point) control, path control (linear only), speed-position switching control			
Control Unit Pulse			
Data Backup No			
Positioning Control	Positioning Control Method	PTP control : Incremental system/absolute system Speed-position switching control : Incremental system Path control : Incremental system/absolute system	
	Positioning Control Range	Absolute system: -2147483648 to 2147483647 (pulse) Incremental system: -2147483648 to 2147483647 (pulse) Speed-position switching control: 0 to 2147483647 (pulse)	
	Speed Command	0 to 200000 (pulse/s)	
	Acceleration/Deceleration Processing	Trapezoidal acceleration/deceleration	
	Accel./Decel. Time	0 to 32767 (ms)	
External Device Connection Connector		A6CON1, A6CON2 (option), A6CON4	
Pulse Output Method		Open collector output	
Max. Output Pulse		200kpps	
Max. Connection Distance Between QD70 and Drive Unit		2m (6.56 feet)	
Internal Current Consumption (5VDC)		0.55A	0.74A
External 24V Current Consumption (24VDC)		0.065A	0.12A
I/O Device Points Occupied		32 points (I/O assignment: Intelligent function module 32 points)	
Weight (kg)		0.15	0.17
Base Unit Slots Occupied		1	

Q Series / V680 Series RFID Interface Module

The RFID interface module is mounted on a Q Series platform enabling communication with Omron V680 Series RFID systems.

Model Number	EQ-V680D1	EQ-V680D2
Stocked Item	-	-
Certification	UL • CE	
Manufactured by Omron Corporation Connectable Antenna	V680-HA63A+V680-HS_ _ ; V680-HA63B+V680-HS_ _ V680-H01-V2	V680-HA63A+V680-HS_ _ ; V680-HA63B+V680-HS_ _
No. of Connectable Antennas	1 antenna	2 antennas
No. of Occupied IO Points	32 points (IO assignments: 32 intelligent module points)	
Data Transfer Volume	2,048 bytes, maximum	
Internal Power Supply Current Consumption 5VDC (Supplied From Inside the Programmable Controller)	0.42A	0.52A
External Power Supply Current Consumption 24VDC (20.4 to 26.4VDC)	0.25A	0.37A
External Power Supply Connection Terminal	2-point terminal block	
Wiring Recommendations	Wire Standard	Heat Resistant PVC Insulated Wire; JIS C 3316 HKIV, JIS C 3317 HIV, UL 758 Style No.1007or1015
	Temperature Rating	Minimum 75°C
	Voltage Rating	300V to 600V
	Conductors Wire Size	AWG18 (0.75mm ² , 0.9mm ²)
	Conductors Metal	Stranded copper
Compatible Crimp Contact Lugs	1.25-3, R1.25-3	
Outer Dimensions (H x W x D) mm	98 x 27.4 x 106.5	
Weight (kg)	0.2	0.2