MITSUBISHI ELECTRIC

TECHNICAL BULLETIN

FA-A-0287-A

Transition to Made-to-order Production and Production Discontinuation of the Positioning Module with Built-in Counter Function, QD72P3C3

■Date of Issue

September 2019

■Relevant Models

QD72P3C3

Thank you for your continued support of Mitsubishi Electric programmable controllers, MELSEC-Q series.

Production of the positioning module with built-in counter function, QD72P3C3, will be discontinued.

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MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

1 MODEL TO BE DISCONTINUED

Model to be discontinued				Alternative model				Remarks
Product	Model	Positioning control	Counter function	Product	Model	Positioning control	Counter function	
		Number of axes	Number of channels			Number of axes	Number of channels	
Positioning module with built-in counter function	QD72P3C3	3 axes	3 channels	Positioning module	QD75P4N	4 axes	—	Depending on the required number of controlled axes and channels, select the positioning module and high-speed counter module.
					QD75P2N	2 axes		
					QD75P1N	1 axis		
					QD70P4	4 axes		
				High-speed counter module	QD62	—	2 channels	

2 SCHEDULE

- Transition to made-to-order: March 31, 2020
- Order acceptance: Until August 10, 2021
- Production discontinuation: September 30, 2021

3 REASON FOR DISCONTINUATION

Main parts of the above products are now obsolete, and we will have difficulty to maintain our production system.

4 REPAIR SUPPORT

Repair support period: Until September 30, 2028 (for seven years after the discontinuation of production)

5 SPECIFICATIONS COMPARISON BETWEEN THE DISCONTINUED AND ALTERNATIVE MODELS

5.1 QD75P4N, QD75P2N, QD75P1N

Model to be discontinued		Alternative model	
Product	**Model**	**Product**	**Model**
Positioning module with built-in counter function	QD72P3C3	Positioning module	QD75P4N
			QD75P2N
			QD75P1N

Performance specifications comparison

■Positioning control

○: Compatible, △: Check required

Item		Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
		QD72P3C3	QD75P□N		
Number of axes		3 axes	• QD75P1N: 1 axis • QD75P2N: 2 axes • QD75P4N: 4 axes	△	Depending on the required number of controlled axes, select the positioning module to replace.
Interpolation function		None (Artificial linear interpolation by coaxial start is available.)	• QD75P1N: None • QD75P2N: Available • QD75P4N: Available	○	—
Control method		• PTP (Point To Point) control • Speed control		○	—
Control unit		pulse		○	—
Positioning data		1 data/axis (It can be set using GX Works2, GX Configurator-PT, or sequence program.)	600 data/axis (It can be set using GX Works2, GX Configurator-QP, or sequence program.)	○	—
Positioning control system		• Incremental system • Absolute system		○	—
Positioning control range	Incremental system	-1073741824 to 1073741823 pulse	-2147483648 to 2147483647 pulse	○	—
	Absolute system	[When using linear counter] -1073741824 to 1073741823 pulse [When using ring counter] 0 to 1073741823 pulse	-2147483648 to 2147483647 pulse		
Speed command		1 to 100000 pulse/s	1 to 4000000 pulse/s	○	—
Acceleration/deceleration process		Trapezoidal acceleration/deceleration		○	—
Acceleration/deceleration time		1 to 5000ms	1 to 8388608ms	○	—
Start time		Position control, speed control • 1-axis start: 1ms • 3-axes concurrent start: 1ms	Position control, speed control • 1-axis start: 1.5ms • 3-axes concurrent start: 2.8ms	△	The start times of position control and speed control are longer. Check the start time in the system.
Pulse output method		Open collector output system		○	—
Max. output pulse		100kpps	200kpps	○	—

Item			Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
			QD72P3C3	QD75P□N		
Output specifications	Pulse output F (PULSE F) Pulse output R (PULSE R)	Rated load voltage	5 to 24VDC		○	—
		Operating load voltage range	4.75 to 30VDC			
		Maximum load current	50mA/point			
		Inrush current	200mA/10ms or lower			
		Maximum voltage drop at ON	0.5VDC (TYP)			
		Leakage current at OFF	0.1mA or lower			
	Deviation counter clear (CLEAR)	Rated load voltage	5 to 24VDC		○	—
		Operating load voltage range	4.75 to 30VDC			
		Maximum load current	0.1A/point			
		Inrush current	0.4A/10ms or lower			
		Maximum voltage drop at ON	1VDC (TYP), 2.5VDC (MAX)			
		Leakage current at OFF	0.1mA or lower			
		Response time	2ms or lower (resistance load)			
		Pulse width	1 to 20ms	1 to 65535ms		
Output specifications	Zero signal (PG0)	Rated input voltage/ current	5VDC/18mA	5VDC/5mA	△	The interface specifications are different. Check the specifications of devices. Check the specifications in the system.
		Operating voltage range	4.5 to 5.5VDC	4.5 to 6.1VDC		
		ON voltage/current	2.7VDC or higher/5.5mA or higher	2VDC or higher/2mA or higher		
		OFF voltage/current	1.0VDC or lower/0.5mA or lower	0.5VDC or lower/0.5mA or lower		
		Input resistance	Approx. 390Ω	Approx. 620Ω		
		Response time	0.1ms or less	1ms or less		
		Minimum pulse width	0.1ms or more	1ms or more		
	Near-point dog signal (DOG)	Rated input voltage/ current	24VDC/5mA		△	
		Operating voltage range	19.2 to 26.4VDC			
		ON voltage/current	17.5VDC or higher/ 3.0mA or higher	17.5VDC or higher/ 3.5mA or higher		
		OFF voltage/current	7.0VDC or lower/0.9mA or lower	7.0VDC or lower/1.7mA or lower		
		Input resistance	Approx. 6.8kΩ	Approx. 4.3kΩ		
		Response time	1ms or less			
	Upper limit signal (FLS) Lower limit signal (RLS)	Rated input voltage/ current	24VDC/5mA		△	
		Operating voltage range	19.2 to 26.4VDC			
		ON voltage/current	17.5VDC or higher/ 3.0mA or higher	17.5VDC or higher/ 3.5mA or higher		
		OFF voltage/current	7.0VDC or lower/0.9mA or lower	7.0VDC or lower/1.7mA or lower		
		Input resistance	Approx. 6.8kΩ	Approx. 4.7kΩ		
		Response time	1ms or less	4ms or less		
Maximum connection distance to drive unit			2m		○	—

■Others

○: Compatible, △: Check required

Item		Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
		QD72P3C3	QD75P□N		
Peripheral/utility package		• GX Works2 (sold separately) • GX Developer (sold separately) • GX Configurator-PT (sold separately)	• GX Works2 (sold separately) • GX Developer (sold separately) • GX Configurator-QP (sold separately)	△	Use the available programming tools.
Data backup		None	Parameters, positioning data, and block start data are stored to a flash ROM. (Battery-less)	○	—
Connector for external devices		A6CON1, A6CON2, A6CON4 (sold separately)		○	—
Applicable wire size	When using A6CON1 and A6CON4	0.3mm² (22 AWG) or less	0.3mm² (22 AWG)	○	—
	When using A6CON2	0.24mm² (24 AWG)	0.088 to 0.24mm² (28 to 24 AWG)		
Internal current consumption (5VDC)		0.57A	• QD75P1N: 0.29A • QD75P2N: 0.30A • QD75P4N: 0.36A	○	—
Number of occupied I/O points		32 points (I/O assignment: Intelligent)		○	—
External dimensions	Height (H)	98mm		○	—
	Width (W)	27.4mm		○	—
	Depth (D)	90mm		○	—
Weight		0.16kg	• QD75P1N: 0.14kg • QD75P2N: 0.14kg • QD75P4N: 0.16kg	○	—

Functional comparison

○: Available, △: Available (setting method check required), ×: Not available

Control method/function name		Description	Model to be discontinued	Alternative model	Precautions for replacement
			QD72P3C3	QD75P□N	
OPR control	Machine OPR control	Mechanically establishes the positioning control start point using a near-point dog or stopper.	○	○	—
	Fast OPR control	Performs positioning control to the OP address stored in positioning module using machine OPR control.	○	○	—
	Count value selection function at OPR	Stores the OP address to "[Md.3] Count value" when OPR is completed.	○	×	No compatibility. Check the alternative method.*1
Positioning control	Position control (1-axis linear control)	Performs positioning control to the position specified to the address set in the positioning data or with the movement amount.	○	○	—
	Speed control	Outputs continuously the pulse depending on the "[Da.4] Command speed" to be set in the positioning data.	○	○	—
	Current value change	Changes the "[Md.1] Current feed value" to the address to be set in the positioning data.	○	○	—
JOG operation		Outputs the pulse to the drive unit only when the JOG start signal is on.	○	○	—
Sub-function	Speed limit function	If the command speed exceeds the "[Pr.4] Speed limit value" during control, this function limits the command speed to within the "[Pr.4] Speed limit value" setting range.	○	△	The setting details are different. The QD75P□N has the same speed limit function as the QD72P3C3 by setting the speed limit value to the JOG speed limit value.
	Speed change function	This function changes the speed during the constant speed of speed control or JOG operation.	○	○	—
	Software stroke limit function	When a command is given to the outside of the upper limit/lower limit stroke limit setting range, which are set in the parameters, this function does not perform a control for the command.	○	○	—
	Hardware stroke limit function	This function stops the deceleration using the limit switch connecting the positioning module.	○	○	—
	Acceleration/ deceleration processing function	This function adjusts the acceleration/ deceleration processing of control.	○	○	—
Common function	External I/O signal logic switching function	This function changes the external I/O signal logic to match the external connection device. It can be changed by setting the intelligent function module switch.	○	△	The setting method is different. The QD75P□N requires to set parameters (buffer memory).
	External I/O signal monitor function	This function monitors the external I/O signal status using the programming tool.	○	○	—

*1 The QD75P□N does not have the count value selection function at OPR. The function is substituted by setting the current feed value of positioning module to the preset value of counter module and executing the preset function of counter module when the OPR completion signal is on.

Comparison of I/O signals

The I/O signals to communicate with programmable controller CPU are different. Change the sequence programs. For details, refer to the following.

📖 Type QD75P/QD75D Positioning Module User's Manual

Signal direction: Module → Programmable controller CPU			Signal direction: Programmable controller CPU → Module		
Device No.	Signal name		Device No.	Signal name	
	Model to be discontinued	Alternative model		Model to be discontinued	Alternative model
	QD72P3C3	QD75P□N		QD72P3C3	QD75P□N
X0	Module READY	QD75 READY	Y0	Programmable controller CPU READY	PLC READY
X1	Axis 1/CH1 error occurrence	Synchronization flag	Y1	Axis 1/CH1 error reset	Use prohibited
X2	Axis 2/CH2 error occurrence	Use prohibited	Y2	Axis 2/CH2 error reset	
X3	Axis 3/CH3 error occurrence		Y3	Axis 3/CH3 error reset	
X4	Axis 1/CH1 warning occurrence	Axis 1 M code ON	Y4	Axis 1 stop	Axis 1 axis stop
X5	Axis 2/CH2 warning occurrence	Axis 2 M code ON	Y5	Axis 2 stop	Axis 2 axis stop
X6	Axis 3/CH3 warning occurrence	Axis 3 M code ON	Y6	Axis 3 stop	Axis 3 axis stop
X7	Use prohibited	Axis 4 M code ON	Y7	Use prohibited	Axis 4 axis stop
X8	Axis 1 BUSY	Axis 1 error detection	Y8	Axis 1 positioning start	Axis 1 forward run JOG start
X9	Axis 2 BUSY	Axis 2 error detection	Y9	Axis 2 positioning start	Axis 1 reverse run JOG start
XA	Axis 3 BUSY	Axis 3 error detection	YA	Axis 3 positioning start	Axis 2 forward run JOG start
XB	Use prohibited	Axis 4 error detection	YB	Use prohibited	Axis 2 reverse run JOG start
XC	Axis 1 start complete	Axis 1 BUSY	YC	Axis 1 forward run JOG start	Axis 3 forward run JOG start
XD	Axis 2 start complete	Axis 2 BUSY	YD	Axis 1 reverse run JOG start	Axis 3 reverse run JOG start
XE	Axis 3 start complete	Axis 3 BUSY	YE	Axis 2 forward run JOG start	Axis 4 forward run JOG start
XF	Use prohibited	Axis 4 BUSY	YF	Axis 2 reverse run JOG start	Axis 4 reverse run JOG start
X10	Axis 1 positioning complete	Axis 1 start complete	Y10	Axis 3 forward run JOG start	Axis 1 positioning start
X11	Axis 2 positioning complete	Axis 2 start complete	Y11	Axis 3 reverse run JOG start	Axis 2 positioning start
X12	Axis 3 positioning complete	Axis 3 start complete	Y12	Use prohibited	Axis 3 positioning start
X13	Use prohibited	Axis 4 start complete	Y13		Axis 4 positioning start
X14	CH1 count value large	Axis 1 positioning complete	Y14	CH1 coincidence signal reset command	Axis 1 execution prohibition flag
X15	CH1 count value coincidence	Axis 2 positioning complete	Y15	CH2 coincidence signal reset command	Axis 2 execution prohibition flag
X16	CH1 count value small	Axis 3 positioning complete	Y16	CH3 coincidence signal reset command	Axis 3 execution prohibition flag
X17	Use prohibited	Axis 4 positioning complete	Y17	Use prohibited	Axis 4 execution prohibition flag
X18	CH2 count value large	Use prohibited	Y18	CH1 preset command	Use prohibited
X19	CH2 count value coincidence		Y19	CH2 preset command	
X1A	CH2 count value small		Y1A	CH3 preset command	
X1B	Use prohibited		Y1B	Use prohibited	
X1C	CH3 count value large		Y1C	CH1 count enable command	
X1D	CH3 count value coincidence		Y1D	CH2 count enable command	
X1E	CH3 count value small		Y1E	CH3 count enable command	
X1F	Use prohibited		Y1F	Use prohibited	

Comparison of buffer memory

The assignment of buffer memory is different. Change the sequence programs. For details, refer to the following.

Type QD75P/QD75D Positioning Module User's Manual

Items of QD72P3C3	Buffer memory address						
	Model to be discontinued			Alternative model			
	QD72P3C3			QD75P□N			
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	Axis 1	Axis 2	Axis 3	Axis 4
[Pr.1] Software stroke limit upper limit value	0	100	200	18	168	318	468
	1	101	201	19	169	319	469
[Pr.2] Software stroke limit lower limit value	2	102	202	20	170	320	470
	3	103	203	21	171	321	471
[Pr.3] Current feed value during speed control	5	105	205	30	180	330	480
[Pr.4] Speed limit value	6	106	206	10	160	310	460
	7	107	207	11	161	311	461
[Pr.5] Bias speed at start	8	108	208	6	156	306	456
	9	109	209	7	157	307	457
[Pr.6] Positioning complete signal output time	10	110	210	59	209	359	509
[Pr.7] Deviation counter clear signal output time	11	111	211	87	237	387	537
[Pr.9] Current feed value, count value simultaneous change function selection	13	113	213	—	—	—	—
[Pr.10] OPR method	20	120	220	70	220	370	520
[Pr.11] OPR direction	21	121	221	71	221	371	521
[Pr.12] OP address	22	122	222	72	222	372	522
	23	123	223	73	223	373	523
[Pr.13] OPR speed	24	124	224	74	224	374	524
	25	125	225	75	225	375	525
[Pr.14] Creep speed	26	126	226	76	226	376	526
	27	127	227	77	227	377	527
[Pr.15] ACC/DEC time at OPR[*1] ("OPR acceleration time selection" and "OPR deceleration time selection" for QD75P□N)	28	128	228	82	232	382	532
				83	233	383	533
[Pr.16] Ring counter upper limit value	30	130	230	—	—	—	—
	31	131	231				
[Pr.17] Positioning range upper limit value	32	132	232				
	33	133	233				
[Pr.18] Coincidence detection setting	34	134	234				
[Pr.19] Count value selection function at OPR	35	135	235				
[JOG.1] JOG speed	40	140	240	1518	1618	1718	1818
	41	141	241	1519	1619	1719	1819
[JOG.2] JOG ACC/DEC time[*2] ("JOG operation acceleration time selection" and "JOG operation deceleration time selection" for QD75P□N)	42	142	242	50	200	350	500
				51	201	351	501
[Da.1] Operation pattern[*3]	90	190	290	2000	8000	14000	20000
[Da.2] Control method[*3]	91	191	291				
[Da.3] ACC/DEC time[*3] ("Acceleration time No." and "Deceleration time No." for QD75P□N)	92	192	292				
[Da.4] Command speed	94	194	294	2004	8004	14004	20004
	95	195	295	2005	8005	14005	20005
[Da.5] Positioning address/movement amount	96	196	296	2006	8006	14006	20006
	97	197	297	2007	8007	14007	20007

Items of QD72P3C3	Buffer memory address						
	Model to be discontinued			Alternative model			
	QD72P3C3			QD75P□N			
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	Axis 1	Axis 2	Axis 3	Axis 4
[Md.1] Current feed value	70	170	270	800	900	1000	1100
	71	171	271	801	901	1001	1101
[Md.2] Current speed ("Feedrate" for QD75P□N)	72	172	272	804	904	1004	1104
	73	173	273	805	905	1005	1105
[Md.3] Count value	74	174	274	—	—	—	—
	75	175	275				
[Md.4] Axis operation status	76	176	276	809	909	1009	1109
[Md.5] Axis/CH error code ("Axis error No." for QD75P□N)	77	177	277	806	906	1006	1106
[Md.6] Axis/CH warning code ("Axis warning No." for QD75P□N)	78	178	278	807	907	1007	1107
[Md.7] Status	79	179	279	817	917	1017	1117
[Md.8] External I/O signal	80	180	280	816	916	1016	1116
[Cd.1] New speed value	50	150	250	1514	1614	1714	1814
	51	151	251	1515	1615	1715	1815
[Cd.2] ACC/DEC time at speed change*4 ("New acceleration time value" and "New deceleration time value" for QD75P□N)	52	152	252	1508	1608	1708	1808
				1509	1609	1709	1809
				1510	1610	1710	1810
				1511	1611	1711	1811
[Cd.3] Speed change request	54	154	254	1516	1616	1716	1816
[Cd.4] OPR request flag OFF request	55	155	255	1521	1621	1721	1821
[Cd.5] Start method ("Positioning start No." for QD75P□N)	56	156	256	1500	1600	1700	1800
[Cd.6] Preset value setting	60	160	260	—	—	—	—
	61	161	261				
[Cd.7] Coincidence detection point setting	62	162	262				
	63	163	263				

*1 The QD75P□N requires to set the "OPR acceleration time selection" and "OPR deceleration time selection".

*2 The QD75P□N requires to set the "JOG operation acceleration time selection" and "JOG operation deceleration time selection".

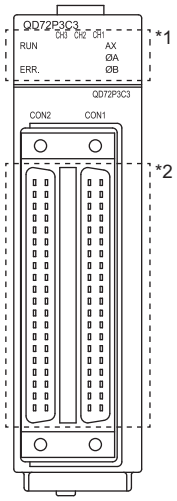
*3 For the QD75P□N, the item consists of "[Da.1] Operation pattern", "[Da.2] Control system", "[Da.3] Acceleration time No.", "[Da.4] Deceleration time No.", and "[Da.5] Axis to be interpolated", which are stored to a buffer memory address.

*4 The QD75P□N requires to set the "New acceleration time value" and "New deceleration time value".

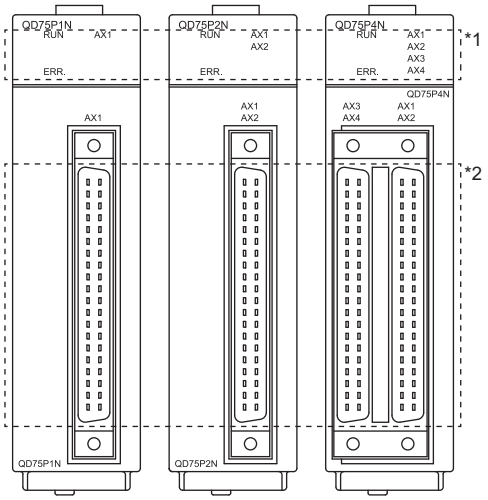
External appearance and signal layout of connector for external devices

Model to be discontinued	Alternative model
QD72P3C3	QD75P□N

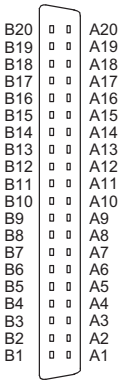
External Appearance



External Appearance



Pin layout (when viewed from the front of module)



Signal layout of connectors for external devices

CON2 (for axis 3)				CON1 (for axes 1 and 2)			
Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
B20	NC	A20	CH3A_24V	B20	CH2A_24V	A20	CH1A_24V
B19	NC	A19	CH3A_5V	B19	CH2A_5V	A19	CH1A_5V
B18	NC	A18	CH3A COM	B18	CH2A COM	A18	CH1A COM
B17	NC	A17	CH3B_24V	B17	CH2B_24V	A17	CH1B_24V
B16	NC	A16	CH3B_5V	B16	CH2B_5V	A16	CH1B_5V
B15	NC	A15	CH3B COM	B15	CH2B COM	A15	CH1B COM
B14	NC	A14	PG03	B14	PG02	A14	PG01
B13	NC	A13	PG03 COM	B13	PG02 COM	A13	PG01 COM
B12	NC	A12	CLEAR3	B12	CLEAR2	A12	CLEAR1
B11	NC	A11	CLEAR3 COM	B11	CLEAR2 COM	A11	CLEAR1 COM
B10	NC	A10	DOG3	B10	DOG2	A10	DOG1
B9	NC	A9	COM1-3	B9	COM1-3	A9	COM1-3
B8	NC	A8	FLS3	B8	FLS2	A8	FLS1
B7	NC	A7	COM1-3	B7	COM1-3	A7	COM1-3
B6	NC	A6	RLS3	B6	RLS2	A6	RLS1
B5	NC	A5	COM1-3	B5	COM1-3	A5	COM1-3
B4	NC	A4	PULSE F3	B4	PULSE F2	A4	PULSE F1
B3	NC	A3	PULSE COM1-3	B3	PULSE COM1-3	A3	PULSE COM1-3
B2	NC	A2	PULSE R3	B2	PULSE R2	A2	PULSE R1
B1	NC	A1	PULSE COM1-3	B1	PULSE COM1-3	A1	PULSE COM1-3

Signal layout of connectors for external devices

Axis 4 (AX4)		Axis 3 (AX3)		Axis 2 (AX2)		Axis 1 (AX1)	
Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
B20	Vacant	A20	Vacant	B20	PULSER B-	A20	PULSER B+
B19	Vacant	A19	Vacant	B19	PULSER A-	A19	PULSER A+
B18	PULSE COM	A18	PULSE COM	B18	PULSE COM	A18	PULSE COM
B17	PULSE R	A17	PULSE R	B17	PULSE R	A17	PULSE R
B16	PULSE COM	A16	PULSE COM	B16	PULSE COM	A16	PULSE COM
B15	PULSE F	A15	PULSE F	B15	PULSE F	A15	PULSE F
B14	CLRCOM	A14	CLRCOM	B14	CLRCOM	A14	CLRCOM
B13	CLEAR	A13	CLEAR	B13	CLEAR	A13	CLEAR
B12	RDYCOM	A12	RDYCOM	B12	RDYCOM	A12	RDYCOM
B11	READY	A11	READY	B11	READY	A11	READY
B10	PG0COM	A10	PG0COM	B10	PG0COM	A10	PG0COM
B9	PG05	A9	PG05	B9	PG05	A9	PG05
B8	PG024	A8	PG024	B8	PG024	A8	PG024
B7	COM	A7	COM	B7	COM	A7	COM
B6	COM	A6	COM	B6	COM	A6	COM
B5	CHG	A5	CHG	B5	CHG	A5	CHG
B4	STOP	A4	STOP	B4	STOP	A4	STOP
B3	DOG	A3	DOG	B3	DOG	A3	DOG
B2	RLS	A2	RLS	B2	RLS	A2	RLS
B1	FLS	A1	FLS	B1	FLS	A1	FLS

*1 The LED indication is different.

*2 The signal layout of connectors for external devices is different. Change the wiring of connectors when replacing.

5.2 QD70P4

Model to be discontinued		Alternative model	
Product	**Model**	**Product**	**Model**
Positioning module with built-in counter function	QD72P3C3	Positioning module	QD70P4

Performance specifications comparison

■Positioning control

○: Compatible, △: Check required, ×: Not compatible

Item		Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
		QD72P3C3	QD70P4		
Number of axes		3 axes	4 axes	○	—
Interpolation function		None (Artificial linear interpolation by coaxial start is available.)	None	○	—
Control method		• PTP (Point To Point) control • Speed control	PTP (Point To Point) control	△	The QD70P4 does not have speed control function. When using speed control, select the QD75P□N as an alternative model.
Control unit		pulse		○	—
Positioning data		1 data/axis (It can be set using GX Works2, GX Configurator-PT, or sequence program.)	10 data/axis (It can be set using GX Works2, GX Configurator-PT, or sequence program.)	○	—
Positioning control system		• Incremental system • Absolute system		○	—
Positioning control range	Incremental system	-1073741824 to 1073741823 pulse	-2147483648 to 2147483647 pulse	○	—
	Absolute system	[When using linear counter] -1073741824 to 1073741823 pulse [When using ring counter] 0 to 1073741823 pulse	-2147483648 to 2147483647 pulse		
Speed command		1 to 100000 pulse/s	0 to 200000 pulse/s	○	—
Acceleration/deceleration process		Trapezoidal acceleration/deceleration		○	—
Acceleration/deceleration time		1 to 5000ms	0 to 32767ms	○	—
Start time		Position control, speed control • 1-axis start: 1ms • 3-axes concurrent start: 1ms	Position control • 1-axis start: 0.1ms • 4-axes concurrent start: 0.2ms	△	The start time for position control is shortened. Check the start time in the system.
Pulse output method		Open collector output system		○	—
Max. output pulse		100kpps	200kpps	○	—

Item			Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
			QD72P3C3	QD70P4		
Output specifications	Pulse output F (PULSE F) Pulse output R (PULSE R)	Rated load voltage	5 to 24VDC		○	—
		Operating load voltage range	4.75 to 30VDC			
		Maximum load current	50mA/point			
		Inrush current	200mA/10ms or lower			
		Maximum voltage drop at ON	0.5VDC (TYP)			
		Leakage current at OFF	0.1mA or lower			
	Deviation counter clear (CLEAR)	Rated load voltage	5 to 24VDC		○	—
		Operating load voltage range	4.75 to 30VDC			
		Maximum load current	0.1A/point			
		Inrush current	0.4A/10ms or lower			
		Maximum voltage drop at ON	1VDC (TYP), 2.5VDC (MAX)			
		Leakage current at OFF	0.1mA or lower			
		Response time	2ms or lower (resistance load)			
		Pulse width	1 to 20ms	1 to 32ms		
Output specifications	Zero signal (PG0)	Rated input voltage/ current	5VDC/18mA		△	The interface specifications are different. Check the specifications of devices. Check the specifications in the system.
		Operating voltage range	4.5 to 5.5VDC			
		ON voltage/current	2.7VDC or higher/5.5mA or higher			
		OFF voltage/current	1.0VDC or lower/0.5mA or lower			
		Input resistance	Approx. 390Ω	Approx. 270Ω		
		Response time	0.1ms or less			
		Minimum pulse width	0.1ms or more			
	Near-point dog signal (DOG)	Rated input voltage/ current	24VDC/5mA		○	—
		Operating voltage range	19.2 to 26.4VDC			
		ON voltage/current	17.5VDC or higher/3.0mA or higher			
		OFF voltage/current	7.0VDC or lower/0.9mA or lower			
		Input resistance	Approx. 6.8kΩ			
		Response time	1ms or less			
	Upper limit signal (FLS) Lower limit signal (RLS)	Rated input voltage/ current	24VDC/5mA	—	×	The QD70P4 does not have the upper limit signal (FLS) and lower limit signal (RLS). When using the upper limit signal (FLS) and lower limit signal (RLS), select the QD75P□N as an alternative model.
		Operating voltage range	19.2 to 26.4VDC			
		ON voltage/current	17.5VDC or higher/3.0mA or higher			
		OFF voltage/current	7.0VDC or lower/0.9mA or lower			
		Input resistance	Approx. 6.8kΩ			
		Response time	1ms or less			
Maximum connection distance to drive unit			2m		○	—

■Others

○: Compatible

Item		Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
		QD72P3C3	QD70P4		
Peripheral/utility package		• GX Works2 (sold separately) • GX Developer (sold separately) • GX Configurator-PT (sold separately)		○	—
Data backup		None		○	—
Connector for external devices		A6CON1, A6CON2, A6CON4 (sold separately)		○	—
Applicable wire size	When using A6CON1 and A6CON4	0.3mm² (22 AWG) or less	0.3mm² (22 AWG)	○	—
	When using A6CON2	0.24mm² (24 AWG)	0.088 to 0.24mm² (28 to 24 AWG)		
Internal current consumption (5VDC)		0.57A	0.55A	○	—
Number of occupied I/O points		32 points (I/O assignment: Intelligent)		○	—
External dimensions	Height (H)	98mm		○	—
	Width (W)	27.4mm		○	—
	Depth (D)	90mm		○	—
Weight		0.16kg	0.15kg	○	—

Functional comparison

○: Available, ×: Not available

Control method/function name		Description	Model to be discontinued	Alternative model	Precautions for replacement
			QD72P3C3	QD70P4	
OPR control	Machine OPR control	Mechanically establishes the positioning control start point using a near-point dog or stopper.	○	○	—
	Fast OPR control	Performs positioning control to the OP address stored in positioning module using machine OPR control.	○	○	—
	Count value selection function at OPR	Stores the OP address to "[Md.3] Count value" when OPR is completed.	○	×	No compatibility. Check the alternative method.*1
Positioning control	Position control (1-axis linear control)	Performs positioning control to the position specified to the address set in the positioning data or with the movement amount.	○	○	—
	Speed control	Outputs continuously the pulse depending on the "[Da.4] Command speed" to be set in the positioning data.	○	×	When using speed control, select the QD75P□N as an alternative model.
	Current value change	Changes the "[Md.1] Current feed value" to the address to be set in the positioning data.	○	○	—
JOG operation		Outputs the pulse to the drive unit only when the JOG start signal is on.	○	○	—
Sub-function	Speed limit function	If the command speed exceeds the "[Pr.4] Speed limit value" during control, this function limits the command speed to within the "[Pr.4] Speed limit value" setting range.	○	○	—
	Speed change function	This function changes the speed during the constant speed of speed control or JOG operation.	○	○	—
	Software stroke limit function	When a command is given to the outside of the upper limit/lower limit stroke limit setting range, which are set in the parameters, this function does not perform a control for the command.	○	○	—
	Hardware stroke limit function	This function stops the deceleration using the limit switch connecting the positioning module.	○	×	When using hardware stroke limit function, select the QD75P□N as an alternative model.
	Acceleration/ deceleration process function	This function adjusts the acceleration/ deceleration processing of control.	○	○	—
Common function	External I/O signal logic switching function	This function changes the external I/O signal logic to match the external connection device. It can be changed by setting the intelligent function module switch.	○	○	—
	External I/O signal monitor function	This function monitors the external I/O signal status using the programming tool.	○	○	—

*1 The QD70P4 does not have the count value selection function at OPR. The function is substituted by setting the current feed value of positioning module to the preset value of counter module and executing the preset function of counter module when the OPR completion signal is on.

Comparison of I/O signals

The I/O signals to communicate with programmable controller CPU are different. Change the sequence programs. For details, refer to the following.

📖 Type QD70 Positioning Module User's Manual

Signal direction: Module → Programmable controller CPU			Signal direction: Programmable controller CPU → Module		
Device No.	Signal name		Device No.	Signal name	
	Model to be discontinued	Alternative model		Model to be discontinued	Alternative model
	QD72P3C3	QD70P4		QD72P3C3	QD70P4
X0	Module READY		Y0	Programmable controller CPU READY	
X1	Axis 1/CH1 error occurrence	Axis error occurrence	Y1	Axis 1/CH1 error reset	Use prohibited
X2	Axis 2/CH2 error occurrence	Axis warning occurrence	Y2	Axis 2/CH2 error reset	
X3	Axis 3/CH3 error occurrence	Use prohibited	Y3	Axis 3/CH3 error reset	
X4	Axis 1/CH1 warning occurrence		Y4	Axis 1 stop	
X5	Axis 2/CH2 warning occurrence		Y5	Axis 2 stop	
X6	Axis 3/CH3 warning occurrence		Y6	Axis 3 stop	
X7	Use prohibited		Y7	Use prohibited	
X8	Axis 1 BUSY		Y8	Axis 1 positioning start	Axis 1 positioning start
X9	Axis 2 BUSY		Y9	Axis 2 positioning start	Axis 2 positioning start
XA	Axis 3 BUSY		YA	Axis 3 positioning start	Axis 3 positioning start
XB	Use prohibited	Axis 4 BUSY	YB	Use prohibited	Axis 4 positioning start
XC	Axis 1 start complete	Use prohibited	YC	Axis 1 forward run JOG start	Use prohibited
XD	Axis 2 start complete		YD	Axis 1 reverse run JOG start	
XE	Axis 3 start complete		YE	Axis 2 forward run JOG start	
XF	Use prohibited		YF	Axis 2 reverse run JOG start	
X10	Axis 1 positioning complete	Axis 1 start complete	Y10	Axis 3 forward run JOG start	Axis 1 axis stop
X11	Axis 2 positioning complete	Axis 2 start complete	Y11	Axis 3 reverse run JOG start	Axis 2 axis stop
X12	Axis 3 positioning complete	Axis 3 start complete	Y12	Use prohibited	Axis 3 axis stop
X13	Use prohibited	Axis 4 start complete	Y13		Axis 4 axis stop
X14	CH1 count value large	Use prohibited	Y14	CH1 coincidence signal reset command	Use prohibited
X15	CH1 count value coincidence		Y15	CH2 coincidence signal reset command	
X16	CH1 count value small		Y16	CH3 coincidence signal reset command	
X17	Use prohibited		Y17	Use prohibited	
X18	CH2 count value large	Axis 1 positioning complete	Y18	CH1 preset command	Axis 1 JOG start
X19	CH2 count value coincidence	Axis 2 positioning complete	Y19	CH2 preset command	Axis 2 JOG start
X1A	CH2 count value small	Axis 3 positioning complete	Y1A	CH3 preset command	Axis 3 JOG start
X1B	Use prohibited	Axis 4 positioning complete	Y1B	Use prohibited	Axis 4 JOG start
X1C	CH3 count value large	Use prohibited	Y1C	CH1 count enable command	Use prohibited
X1D	CH3 count value coincidence		Y1D	CH2 count enable command	
X1E	CH3 count value small		Y1E	CH3 count enable command	
X1F	Use prohibited		Y1F	Use prohibited	

Comparison of buffer memory

The assignment of buffer memory is different. Change the sequence programs. For details, refer to the following.

📖 Type QD70 Positioning Module User's Manual

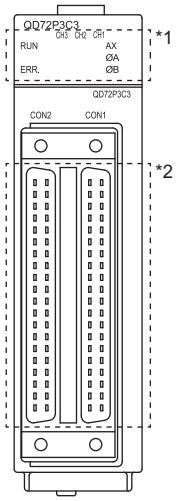
Items of QD72P3C3	Buffer memory address						
	Model to be discontinued			Alternative model			
	QD72P3C3			QD70P4			
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	Axis 1	Axis 2	Axis 3	Axis 4
[Pr.1] Software stroke limit upper limit value	0	100	200	0	100	200	300
	1	101	201	1	101	201	301
[Pr.2] Software stroke limit lower limit value	2	102	202	2	102	202	302
	3	103	203	3	103	203	303
[Pr.3] Current feed value during speed control	5	105	205	5	105	205	305
[Pr.4] Speed limit value	6	106	206	6	106	206	306
	7	107	207	7	107	207	307
[Pr.5] Bias speed at start	8	108	208	8	108	208	308
	9	109	209	9	109	209	309
[Pr.6] Positioning complete signal output time	10	110	210	10	110	210	310
[Pr.7] Deviation counter clear signal output time	11	111	211	11	111	211	311
[Pr.9] Current feed value, count value simultaneous change function selection	13	113	213	—	—	—	—
[Pr.10] OPR method	20	120	220	20	120	220	320
[Pr.11] OPR direction	21	121	221	21	121	221	321
[Pr.12] OP address	22	122	222	22	122	222	322
	23	123	223	23	123	223	323
[Pr.13] OPR speed	24	124	224	24	124	224	324
	25	125	225	25	125	225	325
[Pr.14] Creep speed	26	126	226	26	126	226	326
	27	127	227	27	127	227	327
[Pr.15] ACC/DEC time at OPR[*1] ("ACC/DEC time at OPR" and "DEC/STOP time at OPR" for QD70P4)	28	128	228	28	128	228	328
				29	129	229	329
[Pr.16] Ring counter upper limit value	30	130	230	—	—	—	—
	31	131	231				
[Pr.17] Positioning range upper limit value	32	132	232				
	33	133	233				
[Pr.18] Coincidence detection setting	34	134	234				
[Pr.19] Count value selection function at OPR	35	135	235				
[JOG.1] JOG speed	40	140	240	40	140	240	340
	41	141	241	41	141	241	341
[JOG.2] JOG ACC/DEC time[*2] ("JOG ACC time" and "JOG DEC time" for QD70P4)	42	142	242	42	142	242	342
				43	143	243	343
[Da.1] Operation pattern	90	190	290	800	900	1000	1100
[Da.2] Control method	91	191	291	801	901	1001	1101
[Da.3] ACC/DEC time[*3] ("ACC/DEC time" and "DEC/STOP time" for QD70P4)	92	192	292	802	902	1002	1102
				803	903	1003	1103
[Da.4] Command speed	94	194	294	804	904	1004	1104
	95	195	295	805	905	1005	1105
[Da.5] Positioning address/movement amount	96	196	296	806	906	1006	1106
	97	197	297	807	907	1007	1107

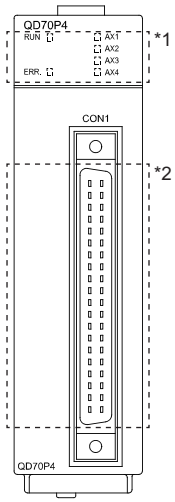
Items of QD72P3C3	Buffer memory address						
	Model to be discontinued			Alternative model			
	QD72P3C3			QD70P4			
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	Axis 1	Axis 2	Axis 3	Axis 4
[Md.1] Current feed value	70	170	270	70	170	270	370
	71	171	271	71	171	271	371
[Md.2] Current speed	72	172	272	74	174	274	374
	73	173	273	75	175	275	375
[Md.3] Count value	74	174	274	—	—	—	—
	75	175	275				
[Md.4] Axis operation status	76	176	276	76	176	276	376
[Md.5] Axis/CH error code ("Axis error code" for QD70P4)	77	177	277	77	177	277	377
[Md.6] Axis/CH warning code ("Axis warning code" for QD70P4)	78	178	278	78	178	278	378
[Md.7] Status	79	179	279	79	179	279	379
[Md.8] External I/O signal	80	180	280	80	180	280	380
[Cd.1] New speed value	50	150	250	56	156	256	356
	51	151	251	57	157	257	357
[Cd.2] ACC/DEC time at speed change*4 ("ACC/DEC time at speed change" and "DEC/STOP time at speed change" for QD70P4)	52	152	252	58	158	258	358
				59	159	259	359
[Cd.3] Speed change request	54	154	254	55	155	255	355
[Cd.4] OPR request flag OFF request	55	155	255	51	151	251	351
[Cd.5] Start method	56	156	256	52	152	252	352
[Cd.6] Preset value setting	60	160	260	—	—	—	—
	61	161	261				
[Cd.7] Coincidence detection point setting	62	162	262				
	63	163	263				

*1 The QD70P4 requires to set the "ACC/DEC time at OPR" and "DEC/STOP time at OPR".
*2 The QD70P4 requires to set the "JOG ACC time" and "JOG DEC time".
*3 The QD70P4 requires to set the "ACC/DEC time" and "DEC/STOP time".
*4 The QD70P4 requires to set the "ACC/DEC time at speed change" and "DEC/STOP time at speed change".

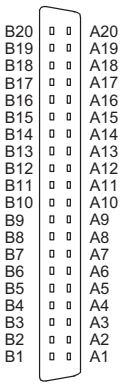
External appearance and signal layout of connector for external devices

Model to be discontinued	Alternative model
QD72P3C3	**QD70P4**
External Appearance	External Appearance





Pin layout (when viewed from the front of module)



Signal layout of connectors for external devices

CON2 (for axis 3)				CON1 (for axes 1 and 2)			
Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
B20	NC	A20	CH3A_24V	B20	CH2A_24V	A20	CH1A_24V
B19	NC	A19	CH3A_5V	B19	CH2A_5V	A19	CH1A_5V
B18	NC	A18	CH3A COM	B18	CH2A COM	A18	CH1A COM
B17	NC	A17	CH3B_24V	B17	CH2B_24V	A17	CH1B_24V
B16	NC	A16	CH3B_5V	B16	CH2B_5V	A16	CH1B_5V
B15	NC	A15	CH3B COM	B15	CH2B COM	A15	CH1B COM
B14	NC	A14	PG03	B14	PG02	A14	PG01
B13	NC	A13	PG03 COM	B13	PG02 COM	A13	PG01 COM
B12	NC	A12	CLEAR3	B12	CLEAR2	A12	CLEAR1
B11	NC	A11	CLEAR3 COM	B11	CLEAR2 COM	A11	CLEAR1 COM
B10	NC	A10	DOG3	B10	DOG2	A10	DOG1
B9	NC	A9	COM1-3	B9	COM1-3	A9	COM1-3
B8	NC	A8	FLS3	B8	FLS2	A8	FLS1
B7	NC	A7	COM1-3	B7	COM1-3	A7	COM1-3
B6	NC	A6	RLS3	B6	RLS2	A6	RLS1
B5	NC	A5	COM1-3	B5	COM1-3	A5	COM1-3
B4	NC	A4	PULSE F3	B4	PULSE F2	A4	PULSE F1
B3	NC	A3	PULSE COM1-3	B3	PULSE COM1-3	A3	PULSE COM1-3
B2	NC	A2	PULSE R3	B2	PULSE R2	A2	PULSE R1
B1	NC	A1	PULSE COM1-3	B1	PULSE COM1-3	A1	PULSE COM1-3

Signal layout of connectors for external devices

CON 1 (for axes 1 to 4)			
Pin No.	Signal name	Pin No.	Signal name
B20	PG02 COM	A20	PG04 COM
B19	PG02	A19	PG04
B18	PG01 COM	A18	PG03 COM
B17	PG01	A17	PG03
B16	CLEAR2 COM	A16	CLEAR4 COM
B15	CLEAR2	A15	CLEAR4
B14	CLEAR1 COM	A14	CLEAR3 COM
B13	CLEAR1	A13	CLEAR3
B12	CHG2	A12	CHG4
B11	CHG1	A11	CHG3
B10	DOG2	A10	DOG4
B9	DOG1	A9	DOG3
B8	COM 1-2	A8	COM 3-4
B7	PULSE F2	A7	PULSE F4
B6	PULSE COM2	A6	PULSE COM4
B5	PULSE R2	A5	PULSE R4
B4	PULSE F1	A4	PULSE F3
B3	PULSE COM1	A3	PULSE COM3
B2	PULSE R1	A2	PULSE R3
B1	+24V	A1	24G

*1 The LED indication is different.

*2 The signal layout of connectors for external devices is different. Change the wiring of connectors when replacing.

5.3 QD62

Model to be discontinued		Alternative model	
Product	**Model**	**Product**	**Model**
Positioning module with built-in counter function	QD72P3C3	High-speed counter module	QD62

Performance specifications comparison

○: Compatible, △: Check required

Item				Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
				QD72P3C3	QD62		
Number of channels				3 channels	2 channels	△	When using three channels, use two QD62 modules.
Counter function	Counting speed (max.)			100kpps	200kpps	○	—
	Counting range			31-bit signed binary [Linear counter] -1073741824 to 1073741823 [Ring counter] 0 to 1073741823	32-bit signed binary [Linear counter] -2147483648 to 2147483647 [Ring counter] -2147483648 to 2147483647	○	—
Output specifications	5VDC	Phase A pulse input Phase B pulse input	Rated input voltage/current	5VDC/18mA	5VDC/5mA	△	The interface specifications are different. Check the specifications of devices to connect.
			Operating voltage range	4.5 to 5.5VDC			
			ON voltage/current	2.7VDC or higher/5.5mA or higher	4.5VDC or higher/2mA or higher		
			OFF voltage/current	1.0VDC or lower/0.5mA or lower	2.0VDC or lower/0.1mA or lower		
			Input resistance	Approx. 390Ω	Approx. 470Ω		
	24VDC		Rated input voltage/current	24VDC/2 to 6mA	24VDC/2 to 5mA		
			Operating voltage range	21.6 to 26.4VDC			
			ON voltage/current	21.6VDC or higher/2mA or higher			
			OFF voltage/current	5VDC or lower/0.1mA or lower			
			Input resistance	Approx. 3900Ω + 390Ω	Approx. 4700Ω		
External interface				40-pin connector		○	—
Peripheral/utility package				• GX Works2 (sold separately) • GX Developer (sold separately) • GX Configurator-PT (sold separately)	• GX Works2 (sold separately) • GX Developer (sold separately) • GX Configurator-CT (sold separately)	△	Use the available programming tools.
Data backup				None		○	—
Connector for external devices				A6CON1, A6CON2, A6CON4 (sold separately)	A6CON1, A6CON2, A6CON3, A6CON4 (sold separately)	○	—
Applicable wire size	When using A6CON1 and A6CON4			0.3mm² (22 AWG) or less	0.3mm² (22 AWG) (stranded wire)	○	—
	When using A6CON2			0.24mm² (24 AWG)	0.088 to 0.24mm² (28 to 24 AWG) (stranded wire)		

Item		Model to be discontinued	Alternative model	Compatibility	Precautions for replacement
		QD72P3C3	QD62		
Internal current consumption (5VDC)		0.57A	0.30A	△	When using two QD62 modules, check the internal current consumption.
Number of occupied I/O points		32 points (I/O assignment: Intelligent)	16 points (I/O assignment: Intelligent)	△	The number of occupied I/O points is different. Change the sequence programs.
External dimensions	Height (H)	98mm		○	—
	Width (W)	27.4mm		○	—
	Depth (D)	90mm		○	—
Weight		0.16kg	0.11kg	△	When using two QD62 modules, check the total weight.

Functional comparison

○: Available, ×: Not available

Function		Description	Model to be discontinued	Alternative model	Precautions for replacement
			QD72P3C3	QD62	
Counter function	Linear counter function	Counts from -1073741824 to 1073741823 and detects an overflow when the count range is overrun.	○	○	—
	Ring counter function	Counts repeatedly from 0 to the "[Pr.16] Ring counter upper limit value". When using the ring counter function, the positioning control range is from 0 to 1073741823 (pulse).	○	○	—
	Count enable function	Counts pulses while the count enable command (Y1C to Y1E) is on.	○	○	—
	Coincidence detection function	Outputs the ON/OFF signal by comparing the preset "[Cd.7] Coincidence detection point setting" with the "[Md.3] Count value".	○	○	—
	Preset function	Rewrites the "[Md.3] Count value" to an arbitrary value.	○	○	—
	Current feed value, count value simultaneous change function	Changes the "[Md.1] Current feed value" and the "[Md.3] Count value" to the same value at presetting or current value change.	○	×	No compatibility. Check the alternative method.*1

*1 The QD62 does not have the current feed value, count value simultaneous change function. The function is substituted by executing simultaneously the current value change function the preset function of high-speed counter module. Note that a gap of the sequence program execution time occurs.

Comparison of I/O signals

The I/O signals to communicate with programmable controller CPU are different. Change the sequence programs. For details, refer to the following.

High-Speed Counter Module User's Manual

Signal direction: Module → Programmable controller CPU			Signal direction: Programmable controller CPU → Module		
Device No.	Signal name		Device No.	Signal name	
	Model to be discontinued	Alternative model		Model to be discontinued	Alternative model
	QD72P3C3	QD62		QD72P3C3	QD62
X0	Module READY		Y0	Programmable controller CPU READY	CH1 coincidence signal No. 1 reset command
X1	Axis 1/CH1 error occurrence	CH1 counter value large (point No. 1)	Y1	Axis 1/CH1 error reset	CH1 preset command
X2	Axis 2/CH2 error occurrence	CH1 counter value coincidence (point No. 1)	Y2	Axis 2/CH2 error reset	CH1 coincidence signal enable command
X3	Axis 3/CH3 error occurrence	CH1 counter value small (point No. 1)	Y3	Axis 3/CH3 error reset	CH1 down count command
X4	Axis 1/CH1 warning occurrence	CH1 external preset request detection	Y4	Axis 1 stop	CH1 count enable command
X5	Axis 2/CH2 warning occurrence	CH1 counter value large (point No. 2)	Y5	Axis 2 stop	CH1 external preset detection reset command
X6	Axis 3/CH3 warning occurrence	CH1 counter value coincidence (point No. 2)	Y6	Axis 3 stop	CH1 counter function selection start command
X7	Use prohibited	CH1 counter value small (point No. 2)	Y7	Use prohibited	CH1 coincidence signal No. 2 reset command
X8	Axis 1 BUSY	CH2 counter value large (point No. 1)	Y8	Axis 1 positioning start	CH2 coincidence signal No. 1 reset command
X9	Axis 2 BUSY	CH2 counter value coincidence (point No. 1)	Y9	Axis 2 positioning start	CH2 preset command
XA	Axis 3 BUSY	CH2 counter value small (point No. 1)	YA	Axis 3 positioning start	CH2 coincidence signal enable command
XB	Use prohibited	CH2 external preset request detection	YB	Use prohibited	CH2 down count command
XC	Axis 1 start complete	CH2 counter value large (point No. 2)	YC	Axis 1 forward run JOG start	CH2 count enable command
XD	Axis 2 start complete	CH2 counter value coincidence (point No. 2)	YD	Axis 1 reverse run JOG start	CH2 external preset detection reset command
XE	Axis 3 start complete	CH2 counter value small (point No. 2)	YE	Axis 2 forward run JOG start	CH2 counter function selection start command
XF	Use prohibited	Fuse broken detection flag	YF	Axis 2 reverse run JOG start	CH2 coincidence signal No. 2 reset command

Signal direction: Module → Programmable controller CPU			Signal direction: Programmable controller CPU → Module		
Device No.	Signal name		Device No.	Signal name	
	Model to be discontinued	Alternative model		Model to be discontinued	Alternative model
	QD72P3C3	QD62		QD72P3C3	QD62
X10	Axis 1 positioning complete	(Not assigned)	Y10	Axis 3 forward run JOG start	(Not assigned)
X11	Axis 2 positioning complete		Y11	Axis 3 reverse run JOG start	
X12	Axis 3 positioning complete		Y12	Use prohibited	
X13	Use prohibited		Y13		
X14	CH1 count value large		Y14	CH1 coincidence signal reset command	
X15	CH1 count value coincidence		Y15	CH2 coincidence signal reset command	
X16	CH1 count value small		Y16	CH3 coincidence signal reset command	
X17	Use prohibited		Y17	Use prohibited	
X18	CH2 count value large		Y18	CH1 preset command	
X19	CH2 count value coincidence		Y19	CH2 preset command	
X1A	CH2 count value small		Y1A	CH3 preset command	
X1B	Use prohibited		Y1B	Use prohibited	
X1C	CH3 count value large		Y1C	CH1 count enable command	
X1D	CH3 count value coincidence		Y1D	CH2 count enable command	
X1E	CH3 count value small		Y1E	CH3 count enable command	
X1F	Use prohibited		Y1F	Use prohibited	

Comparison of buffer memory

The assignment of buffer memory is different. Change the sequence programs. For details, refer to the following.

High-Speed Counter Module User's Manual

Items of QD72P3C3	Buffer memory address				
	Model to be discontinued			Alternative model	
	QD72P3C3			QD62	
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	CH1	CH2
[Pr.1] Software stroke limit upper limit value	0	100	200	—	—
	1	101	201		
[Pr.2] Software stroke limit lower limit value	2	102	202		
	3	103	203		
[Pr.3] Current feed value during speed control	5	105	205		
[Pr.4] Speed limit value	6	106	206		
	7	107	207		
[Pr.5] Bias speed at start	8	108	208		
	9	109	209		
[Pr.6] Positioning complete signal output time	10	110	210		
[Pr.7] Deviation counter clear signal output time	11	111	211		
[Pr.9] Current feed value, count value simultaneous change function selection	13	113	213		
[Pr.10] OPR method	20	120	220		
[Pr.11] OPR direction	21	121	221		
[Pr.12] OP address	22	122	222		
	23	123	223		
[Pr.13] OPR speed	24	124	224		
	25	125	225		
[Pr.14] Creep speed	26	126	226		
	27	127	227		
[Pr.15] ACC/DEC time at OPR	28	128	228		
[Pr.16] Ring counter upper limit value	30	130	230	22	54
	31	131	231	23	55
[Pr.17] Positioning range upper limit value	32	132	232	—	—
	33	133	233		
[Pr.18] Coincidence detection setting	34	134	234		
[Pr.19] Count value selection function at OPR	35	135	235		
[JOG.1] JOG speed	40	140	240		
	41	141	241		
[JOG.2] JOG ACC/DEC time	42	142	242		
[Da.1] Operation pattern	90	190	290		
[Da.2] Control method	91	191	291		
[Da.3] ACC/DEC time	92	192	292		
[Da.4] Command speed	94	194	294		
	95	195	295		
[Da.5] Positioning address/movement amount	96	196	296		
	97	197	297		
[Md.1] Current feed value	70	170	270		
	71	171	271		
[Md.2] Current speed	72	172	272		
	73	173	273		

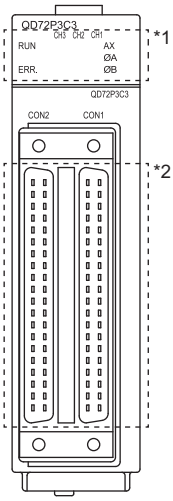
Items of QD72P3C3	Buffer memory address				
	Model to be discontinued			Alternative model	
	QD72P3C3			QD62	
	Axis 1/ CH1	Axis 2/ CH2	Axis 3/ CH3	CH1	CH2
[Md.3] Count value ("Present value" for QD62)	74	174	274	2	34
	75	175	275	3	35
[Md.4] Axis operation status	76	176	276	—	—
[Md.5] Axis/CH error code	77	177	277		
[Md.6] Axis/CH warning code	78	178	278		
[Md.7] Status	79	179	279		
[Md.8] External I/O signal	80	180	280		
[Cd.1] New speed value	50	150	250		
	51	151	251		
[Cd.2] ACC/DEC time at speed change	52	152	252		
[Cd.3] Speed change request	54	154	254		
[Cd.4] OPR request flag OFF request	55	155	255		
[Cd.5] Start method	56	156	256		
[Cd.6] Preset value setting	60	160	260	0	32
	61	161	261	1	33
[Cd.7] Coincidence detection point setting*1 ("Coincidence output point set No. 1" and "Coincidence output point set No. 2" for QD62)	62	162	262	4	36
	63	163	263	5	37
	—	—	—	6	38
				7	39

*1 For the QD62, "Coincidence output point set No. 1" and "Coincidence output point set No. 2" can be set to one channel.

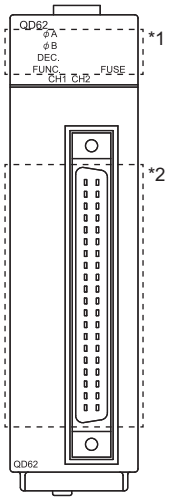
External appearance and signal layout of connector for external devices

Model to be discontinued	Alternative model
QD72P3C3	**QD62**

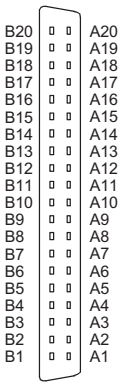
External Appearance



External Appearance



Pin layout (when viewed from the front of module)



Signal layout of connectors for external devices

CON2 (for axis 3)				CON1 (for axes 1 and 2)			
Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
B20	NC	A20	CH3A_24V	B20	CH2A_24V	A20	CH1A_24V
B19	NC	A19	CH3A_5V	B19	CH2A_5V	A19	CH1A_5V
B18	NC	A18	CH3A COM	B18	CH2A COM	A18	CH1A COM
B17	NC	A17	CH3B_24V	B17	CH2B_24V	A17	CH1B_24V
B16	NC	A16	CH3B_5V	B16	CH2B_5V	A16	CH1B_5V
B15	NC	A15	CH3B COM	B15	CH2B COM	A15	CH1B COM
B14	NC	A14	PG03	B14	PG02	A14	PG01
B13	NC	A13	PG03 COM	B13	PG02 COM	A13	PG01 COM
B12	NC	A12	CLEAR3	B12	CLEAR2	A12	CLEAR1
B11	NC	A11	CLEAR3 COM	B11	CLEAR2 COM	A11	CLEAR1 COM
B10	NC	A10	DOG3	B10	DOG2	A10	DOG1
B9	NC	A9	COM1-3	B9	COM1-3	A9	COM1-3
B8	NC	A8	FLS3	B8	FLS2	A8	FLS1
B7	NC	A7	COM1-3	B7	COM1-3	A7	COM1-3
B6	NC	A6	RLS3	B6	RLS2	A6	RLS1
B5	NC	A5	COM1-3	B5	COM1-3	A5	COM1-3
B4	NC	A4	PULSE F3	B4	PULSE F2	A4	PULSE F1
B3	NC	A3	PULSE COM1-3	B3	PULSE COM1-3	A3	PULSE COM1-3
B2	NC	A2	PULSE R3	B2	PULSE R2	A2	PULSE R1
B1	NC	A1	PULSE COM1-3	B1	PULSE COM1-3	A1	PULSE COM1-3

Signal layout of connectors for external devices

Pin No.	Signal name	Pin No.	Signal name
B20	CH1 Phase A pulse input 12 V	A20	CH1 Phase A pulse input 24 V
B19	CH1 ABCOM	A19	CH1 Phase A pulse input 5 V
B18	CH1 Phase B pulse input 12 V	A18	CH1 Phase B pulse input 24 V
B17	CH1 Preset input 24 V	A17	CH1 Phase B pulse input 5 V
B16	CH1 Preset input 5 V	A16	CH1 Preset input 12 V
B15	CH1 Function start input 24 V	A15	CH1 CTRLCOM
B14	CH1 Function start input 5 V	A14	CH1 Function start input 12 V
B13	CH2 Phase A pulse input 12 V	A13	CH2 Phase A pulse input 24 V
B12	CH2 ABCOM	A12	CH2 Phase A pulse input 5 V
B11	CH2 Phase B pulse input 12 V	A11	CH2 Phase B pulse input 24 V
B10	CH2 Preset input 24 V	A10	CH2 Phase B pulse input 5 V
B9	CH2 Preset input 5 V	A9	CH2 Preset input 12 V
B8	CH2 Function start input 24 V	A8	CH2 CTRLCOM
B7	CH2 Function start input 5 V	A7	CH2 Function start input 12 V
B6	CH1 EQU2 (Coincidence output point No. 2)	A6	CH1 EQU1 (Coincidence output point No. 1)
B5	CH2 EQU2 (Coincidence output point No. 2)	A5	CH2 EQU1 (Coincidence output point No. 1)
B4	NC	A4	NC
B3	NC	A3	NC
B2	12/24V	A2	0V
B1	12/24V	A1	0V

*1 The LED indication is different.

*2 The signal layout of connectors for external devices is different. Change the wiring of connectors when replacing.

REVISIONS

Version	Date of Issue	Revision
A	September 2019	First edition