NIKKI DENSO

Instruction Manual

VCⅡ Series
C1 Type
Data

Manual No. TI-13910

Ver. 2.1

Preface

We thank you very much for adopting the AC servo controller <VCⅡ-C1 Type> this time.

In the text of this instruction manual, "Instruction Manual VCⅡSeries C1 Type Data" is indicated as "this manual" and in the same way, "VCⅡ Series controller C1 Type" is indicated as "servo controller" or "this servo controller".

Precautions in safety

Before installation, wiring, operation, maintenance and inspection, and abnormality diagnosis and countermeasures, carefully read this manual and all other related operating instruction manuals for proper usage.
Before use, be sure to fully acquaint with the equipment, safety information, and other related precautions.

In the table below, cautions for safety are ranked as "Danger" and "Caution".
And contents to follow are ranked as "Prohibition" and "Compulsion".

Danger	If mishandling is made, dangerous situation as death or serious injury on a worker could occur.
Caution	If mishandling is made, dangerous situation as medium or light injury could occur and damages on goods could be suspected. However, since Caution-marked item could also cause serious results depending on the actual conditions, please comply with the important instructions.
Prohibition	Prohibitions (actions not to be done) are indicated.
Compulsion	Compulsions (actions to be done) are indicated.

Precautions in handling

⚠ Caution
If you make any wrong command, parameter, and other data settings, not only abnormal operation will occur, but also the runaway and burn of the servo controller and injury may occur. Take adequate care when making settings.

About this manual

This manual explains the internal data of the servo controller.

For information on the installation, wiring, usage, maintenance and inspection, abnormality diagnosis, and countermeasures about the servo controller to use, as well as setting and display, refer to the "AC Servo controller VCⅡ Series C1 Type Instruction Manual".
In the event of any conflicts, the "AC Servo controller VCⅡ Series C1 Type Instruction Manual" prevail over this manual.

In order to use the internal data properly for data communication, make sure that you have a full understanding of the contents of this manual.

- This manual covers the servo controller of the following versions:
  - Software version 2.00 or later
  - Hardware version 2.00 or later
- n the main text, a P + 3-digit representation such as P000 means a parameter number.
- A hexadecimal number is distinguished from a decimal number by adding an "H" at the end of the number.

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Contents

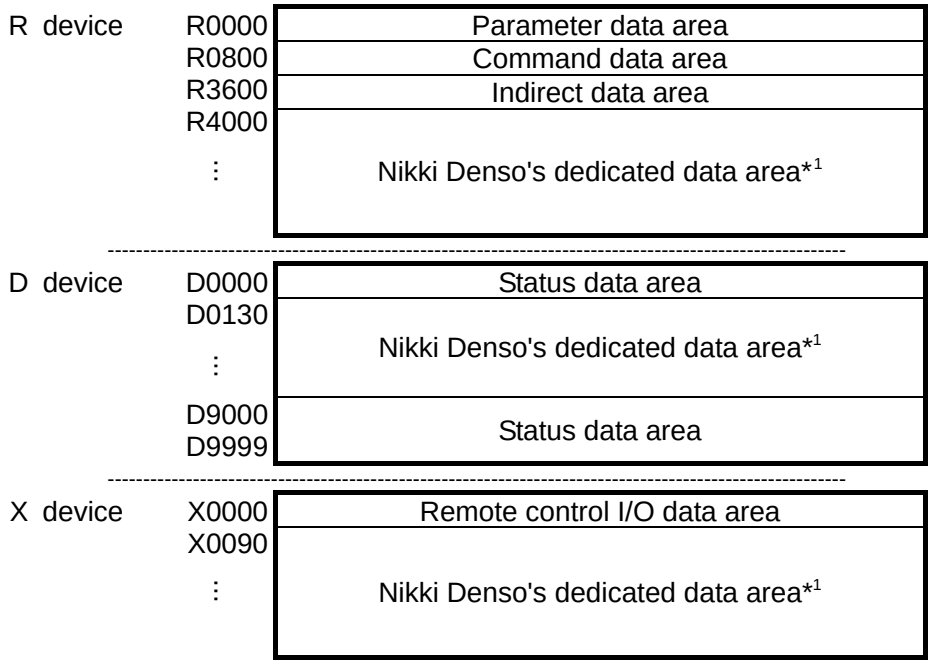
Chapter 1 Data area configuration

1-1 Overall configuration

There are three types of data area: R device and D device areas that store data such as parameter data, command data, indirect data, and status data (16 bits/data) and X device area for remote control I/O (1 bit/data).

By reading data from or writing data to these data areas according to the relevant communication protocol, you can:

1) Transmit and receive parameter data
2) Transmit and receive command data
3) Transmit and receive indirect data
4) Read status data of the servo controller
5) Operate the servo controller through communication instead of external input signals



⚠ Caution

- The number of times that the data areas from R0000 to R3699 can be rewritten is limited to 10000.
- During communication, no check is made regarding the device number, data range, consistency with other data, etc. If an attempt is made to write data to Nikki Denso's dedicated data area or a nonexistent area or if a command is sent that requests the writing of out-of-range data or data inconsistent with other data, the written data is reflected on the operation as is, potentially not only causing a malfunction but also burning the motor or damaging the servo controller. Therefore, due care is required.
- Data may be read and written anytime. However, since rewriting data during an automatic run may cause a malfunction, refrain from writing data during an automatic run.

*1 Nikki Denso's dedicated data area is intended for internal use in the servo controller. Do not write data to this area.

Chapter 2 Parameter data

2-1 Setting data in the parameter area

You can edit the parameters of the servo controller by "reading" and "writing" them using the "R devices".

The parameters related to the basic specifications for serial communication need to be set on the servo controller side.

The number of times that you can rewrite the R devices in the parameter area is limited to 10000.

Two device numbers are assigned to each parameter in the parameter area, and a single parameter consists of 32 bits.

The upper/lower relationship between the two device numbers is as shown in Table 2-1.

Table 2-1 Data structure of the parameter area

Device No.	Parameter No.	Set data	
R0000	P000	Upper	Lower
R0001		R0000	R0001

The data to be set in this area is 32-bit-long signed or unsigned hexadecimal data ignoring the decimal point.

Table 2-2 Examples of data set in the parameter area

[Value setting]

Device No.	Parameter No.	Parameter name	Set value (example)
R0262 R0263	P211	Acceleration time 1	10.000 sec

Set data

Upper	Lower
R0262	R0263
0000H	2710H

10.000 (Decimal) → Ignore decimal point → 10000 (Decimal) → 2710H (Hexadecimal) → Convert to hexadecimal → 00002710H → 32-bit-long data (8 digits in hexadecimal)

[Value setting]

Device No.	Parameter No.	Parameter name	Set value (example)
R0192 R0193	P136	Speed command value 3	-30.00 %

Set data

Upper	Lower
R0192	R0193
FFFFH	F448H

-30.00 (Decimal) → Ignore decimal point → -3000 (Decimal) → FFFFF448H (Hexadecimal) → Convert to hexadecimal → FFFFF448H → 32-bit-long data (8 digits in hexadecimal)

[Number selection]

Device No.	Parameter No.	Parameter name	Set value (example)
R0300 R0301	P300	Rotation direction selection	1:REVERSE

Set data

Upper	Lower
R0300	R0301
0000H	0001H

1 (Decimal) → 1H (Hexadecimal) → Convert to hexadecimal → 00000001H → 32-bit-long data (8 digits in hexadecimal)

2-2 Parameter area list

The parameters for the VCⅡ-C1 model are listed below.

Do not change the manufacturer exclusive use parameters or reserved parameters.

Table 2-3 Motor and encoder parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0000 R0001	P000	Motor type	Value setting	000 to 999
R0002 R0003	P001	Encoder type selection	Number selection	0:INC1 1:INC2 2:INC3 3:L-SEN 4:S-INC 5:S-ABS 6:C-SEN1 7:C-SEN2 8:S-INC2 9:S-ABS2
R0004 R0005	P002	IM/SM motor encoder pulse selection	Number selection	0:1000 1:2000 2:6000 3:17bit
R0006 R0007	P003	Tau linear motor linear sensor resolution	Value setting	-999.00000 to 100.00000
R0008 R0009	P004	Tau DISC motor encoder pulse number	Value setting	1 to 99999999
R0010 R0011	P005	IM/SM/Tau DISC motor use maximum speed	Value setting	0 to 20000
R0012 R0013	P006	Tau linear motor use maximum speed	Value setting	0 to 100000.00
R0014 R0015	P007	Tau linear motor rated speed	Value setting	0.01 to 100000.00
R0016 R0017	P008	Encoder & magnetic pole sensor direction selection	Number selection	0 to 3
R0018 R0019	P009	Carrier frequency selection	Number selection	0:7.5KHz 1:10KHz 2:15KHz 3:20KHz
R0020 R0021	P010	Tau Linear/Tau DISC motor magnetic pole sensor type	Value setting	0 to 9
R0022 R0023	P011	Tau Linear/Tau DISC motor magnetic pole sensor offset	Value setting	0.00 to 100.00
R0024 R0025	P012	Encoder feedback output numerator value	Value setting	0 to 99999999
R0026 R0027	P013	Encoder feedback output denominator value	Value setting	0 to 99999999
R0028 R0029	P014	Manufacturer exclusive use		
R0030 R0031	P015	Manufacturer exclusive use		
R0032 R0033	P016	Manufacturer exclusive use		
R0034 R0035	P017	Manufacturer exclusive use		

Table 2-4 Motor and encoder parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0036 R0037	P018	ABS encoder value for machine base position	Value setting	-99999999 to 99999999
R0038 R0039	P019	Machine base position for ABS encoder value	Value setting	-99999999 to 99999999
R0040 R0041	P020	Motor type pole number	Value setting	00000000 to 99999999
R0042 R0043	P021	Rated torque current	Value setting	00000 to 65535
R0044 R0045	P022	Rated speed (Field system control base speed)	Value setting	1 to 20000
R0046 R0047	P023	Maximum momentary torque ratio	Value setting	100 to 799
R0048 R0049	P024	Exciting current	Value setting	0 to 65535
R0050 R0051	P025	Rated output	Value setting	0.000 to 999.999
R0052 R0053	P026	Current loop coefficient	Value setting	0 to 300
R0054 to R0059	----	Reserved		
R0060 R0061	P030	Phase compensation angle	Value setting	-100 to 100
R0062 R0063	P031	Servo controller rated torque current	Value setting	0 to 65535
R0064 R0065	P032	Servo controller maximum momentary torque ratio	Value setting	100 to 799
R0066 R0067	P033	Servo controller power source capacity	Value setting	0.000 to 999.999
R0068 to R0073	----	Reserved		
R0074 R0075	P037	Torque command change amount limit value	Value setting	0 to 65535
R0076 to R0079	----	Reserved		

Table 2-5 Motor and encoder parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0080 R0081	P040	Primary resistance	Value setting	0 to 99999999
R0082 R0083	P041	Secondary resistance	Value setting	0 to 99999999
R0084 R0085	P042	Primary self-inductance	Value setting	0 to 99999999
R0086 R0087	P043	Secondary self-inductance	Value setting	0 to 99999999
R0088 R0089	P044	Mutual inductance	Value setting	0 to 99999999
R0090 R0091	P045	Leakage coefficient	Value setting	0 to 99999999
R0092 R0093	P046	Dead time compensation time	Value setting	0 to 65535
R0094 R0095	P047	Current loop cut off frequency	Value setting	0 to 65535
R0096 R0097	P048	Current loop derivative time constant	Value setting	0 to 65535
R0098 R0099	P049	Torque constant	Value setting	0 to 99999999
R0100 R0101	P050	Magnetic pole sensor sin gain	Value setting	0 to 4096
R0102 R0103	P051	Magnetic pole sensor sin offset	Value setting	-999 to 999
R0104 R0105	P052	Magnetic pole sensor cos gain	Value setting	0 to 4096
R0106 R0107	P053	Magnetic pole sensor cos offset	Value setting	-999 to 999
R0108 R0109	P054	Tau DISC motor encoder compensation	Value setting	-99999999 to 99999999
R0110 R0111	P055	Low pass filter frequency at auto magnetic pole detection	Value setting	0 to 4999
R0112 R0113	P056	Set landing torque at auto magnetic pole detection	Value setting	0.0 to 100.0
R0114 R0115	P057	Set landing torque holding time at auto magnetic pole detection	Value setting	0.00 to 9.99
R0116 R0117	P058	Distance between linear motor pole opposite	Value setting	0.01 to 1000.00
R0118 R0119	P059	Special encoder pulse number	Value setting	0 to 99999999

Table 2-6 Driver adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0120 R0121	P100	Low-speed range for gain change	Value setting	0.00 to 100.00
R0122 R0123	P101	Speed loop gain	Value setting	0 to 9999
R0124 R0125	P102	Speed loop integral time constant	Value setting	0.00 to 9999.99
R0126 R0127	P103	Speed loop differential time constant	Value setting	-9999 to 9999
R0128 R0129	P104	Speed loop proportional gain division ratio	Value setting	-100.0 to 100.0
R0130 R0131	P105	Speed loop differential gain division ratio	Value setting	-100.0 to 100.0
R0132 R0133	P106	Speed loop gain/Low-speed range	Value setting	0 to 9999
R0134 R0135	P107	Speed loop integral time constant/Low-speed range	Value setting	0.00 to 9999.99
R0136 R0137	P108	Speed loop differential time constant/Low-speed range	Value setting	-9999 to 9999
R0138 R0139	P109	Speed loop proportional gain division ratio/Low-speed range	Value setting	-100.0 to 100.0
R0140 R0141	P110	Speed loop differential gain division ratio/Low-speed range	Value setting	-100.0 to 100.0
R0142 R0143	P111	Speed loop gain at GSEL1	Value setting	0 to 9999
R0144 R0145	P112	Speed loop integral time constant at GSEL1	Value setting	0.00 to 9999.99
R0146 R0147	P113	Speed loop differential time constant at GSEL1	Value setting	-9999 to 9999
R0148 R0149	P114	Speed loop proportional gain division ratio at GSEL1	Value setting	-100.0 to 100.0
R0150 R0151	P115	Speed loop differential gain division ratio at GSEL1	Value setting	-100.0 to 100.0
R0152 R0153	P116	Torque limiting value at magnetic pole detection	Value setting	0.0 to 799.9
R0154 R0155	P117	Magnetic pole detection gain 1	Value setting	0 to 9999
R0156 R0157	P118	Magnetic pole detection integral calculus time constant	Value setting	000 to 65535
R0158 R0159	P119	Magnetic pole detection gain 2	Value setting	0 to 9999
R0160 R0161	P120	Torque command filter frequency	Value setting	0 to 4999
R0162 R0163	P121	Notch filter center frequency 1	Value setting	0 to 4999
R0164 R0165	P122	Notch filter bandwidth 1	Value setting	0 to 4999

Table 2-7 Driver adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0166 R0167	P123	Notch filter center frequency 2	Value setting	0 to 4999
R0168 R0169	P124	Notch filter bandwidth 2	Value setting	0 to 4999
R0170 R0171	P125	Torque limit value 1+	Value setting	0.0 to 799.9
R0172 R0173	P126	Torque limit value 1-	Value setting	0.0 to 799.9
R0174 R0175	P127	Torque limit value 2+	Value setting	-0.1 to 799.9
R0176 R0177	P128	Torque limit value 2-	Value setting	-0.1 to 799.9
R0178 R0179	P129	Speed command gain	Value setting	6.00 to 100.00
R0180 R0181	P130	Speed command offset	Value setting	-999 to 999
R0182 R0183	P131	Torque command offset	Value setting	-999 to 999
R0184	P132	External speed limit effective/ineffective selection	Number selection	0:SPD.LIM.N
R0185				1:SPD.LIM.Y
R0186 R0187	P133	Speed limit value	Value setting	0.00 to 120.00
R0188 R0189	P134	Internal speed command value 1	Value setting	-100.00 to 100.00
R0190 R0191	P135	Internal speed command value 2	Value setting	-100.00 to 100.00
R0192 R0193	P136	Internal speed command value 3	Value setting	-100.00 to 100.00
R0194 R0195	P137	Internal torque command value 1	Value setting	-799.9 to 799.9
R0196 R0197	P138	Internal torque command value 2	Value setting	-799.9 to 799.9
R0198 R0199	P139	Internal torque command value 3	Value setting	-799.9 to 799.9

Table 2-8 Driver adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range	
R0200	P140	Auto tuning trial run direction/inertia selection	Number selection	0:BOTH/N	1:+ONLY/N
R0201				2:-ONLY/N	3:BOTH/H
				4:+ONLY/H	5:-ONLY/H
R0202	P141	Auto tuning trial run speed ratio	Value setting	0.00 to 1.00	
R0203					
R0204	P142	Torque limit selection at alarm stop	Number selection	0:ALM.TL.N	
R0205				1:ALM.TL.Y	
R0206	P143	R2 compensation selection	Number selection	0:R2 OFF	1:R2 ID
R0207					
R0208	P144	Electronic-thermal detecting method selection	Number selection	0:STD / 1:BIG	2:O.L.110%
R0209				3:O.L.50%	4:O.L.70%
				5:O.L.90%	6:O.L.130%
				7:O.L.150%	8:O.L.170%
				9:O.L.190%	
R0210	P145	Magnetic pole sensor automatic adjustment operation	Value setting	-100 to 100	
R0211					
R0212	P146	Mass/inertia	Value setting	0 to 999999999	
R0213					
R0214	P147	Viscous friction	Value setting	0 to 999999999	
R0215					
R0216	P148	Disturbance correction filter frequency	Value setting	0 to 4999	
R0217					
R0218	P149	Tau DISC motor initialization operation	Value setting	-100 to 100	
R0219					
R0220	P150	Disturbance correction filter invalid limit	Value setting	0.00 to 100.00	
R0221					
R0222	P151	Notch filter center frequency 3	Value setting	0 to 4999	
R0223					
R0224	P152	Notch filter bandwidth 3	Value setting	0 to 4999	
R0225					
R0226	P153	Notch filter center frequency 4	Value setting	0 to 4999	
R0227					
R0228	P154	Notch filter bandwidth 4	Value setting	0 to 4999	
R0229					
R0230	P155	Notch filter center frequency 5	Value setting	0 to 4999	
R0231					
R0232	P156	Notch filter bandwidth 5	Value setting	0 to 4999	
R0233					
R0234	P157	Manufacturer exclusive use			
R0235					
R0236	P158	Normal rated power of regeneration resistance	Value setting	-999.999 to 999.999	
R0237					
R0238	P159	Sensor installation radius	Value setting	0.000 to 10000.000	
R0239					

Table 2-9 NC adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0240 R0241	P200	Position loop gain	Value setting	0 to 9999
R0242 R0243	P201	Servo lock gain	Value setting	0 to 9999
R0244 R0245	P202	Positioning completion range	Value setting	0 to 999
R0246 R0247	P203	Positioning time over	Value setting	0.00 to 9.99
R0248 R0249	P204	Backlash compensation value	Value setting	-999 to 999
R0250 R0251	P205	Feed forward ratio	Value setting	0.0 to 120.0
R0252 R0253	R206	Feed forward shift ratio	Value setting	0.0 to 100.0
R0254 R0255	P207	Overflow detecting pulse	Value setting	1000 to 99999999
R0256 R0257	P208	Deviation error detecting pulse	Value setting	0 to 99999999
R0258 R0259	P209	Motion selection at deviation error	Number selection	0:STOP 1:CONTINUE
R0260 R0261	P210	S-curve acceleration/deceleration increasing time	Value setting	0.0 to 1000.0
R0262 R0263	P211	Acceleration time 1	Value setting	0.000 to 99.999
R0264 R0265	P212	Acceleration time 2	Value setting	0.000 to 99.999
R0266 R0267	P213	Acceleration time 3	Value setting	-0.099 to 99.999
R0268 R0269	P214	Deceleration time 1	Value setting	0.000 to 99.999
R0270 R0271	P215	Deceleration time 2	Value setting	0.000 to 99.999
R0272 R0273	P216	Deceleration time 3	Value setting	-0.099 to 99.999
R0274 R0275	P217	Positioning feed forward differential addition ratio	Value setting	-1 to 31
R0276 R0277	P218	Pulse train feed forward differential addition ratio	Value setting	-1 to 31
R0278 R0279	P219	Auto tuning condition selection	Value setting	0 to 21

Table 2-10 NC adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0280 R0281	P220	Position loop differential time constant	Value setting	0 to 9999
R0282 R0283	P221	Servo lock differential time constant	Value setting	0 to 9999
R0284 R0285	P222	Manufacturer exclusive use		
R0286 R0287	P223	Manufacturer exclusive use		
R0288 R0289	P224	Inertia feed forward ratio	Value setting	0.0 to 200.0
R0290 R0291	P225	Viscous friction feed forward ratio	Value setting	0.0 to 200.0
R0292 R0293	P226	Position loop gain at GSEL1	Value setting	0 to 9999
R0294 R0295	P227	Servo lock gain at GSEL1	Value setting	0 to 9999
R0296 R0297	P228	Position loop gain at GSEL2	Value setting	0 to 9999
R0298 R0299	P229	Servo lock gain at GSEL2	Value setting	0 to 9999

Table 2-11 Position adjustment parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range	
R0300	P300	Rotation direction selection	Number selection	0:FORWARD	
R0301				1:REVERSE	
R0302	P301	Setting unit selection	Number selection	0:mm	1:° (deg)
R0303				2:in (inch)	
R0304	P302	Minimum setting unit	Number selection	0:0.00001	1:0.0001
				2:0.001	3:0.01
R0305				4:0.1	5:1
				6:0.000001	7:0.0000001
R0306	P303	Electronic gear ratio numerator	Value setting	1 to 99999999	
R0307					
R0308	P304	Electronic gear ratio denominator	Value setting	1 to 99999999	
R0309					
R0310	P305	Rotating object position range	Value setting	0 to 99999999	
R0311					
R0312	P306	Forward software OT limit	Value setting	-99999999 to 99999999	
R0313					
R0314	P307	Reverse software OT limit	Value setting	-99999999 to 99999999	
R0315					
R0316	P308	Forward positioning amount max. value	Value setting	0 to 99999999	
R0317					
R0318	P309	Reverse positioning amount max. value	Value setting	-99999999 to 0	
R0319					
R0320	P310	Machine travel amount	Value setting	0 to 99999999	
R0321					
R0322	----	Reserved			
R0323					
R0324	P312	Mass/inertia at GSEL condition	Value setting	0 to 999999999	
R0325					
R0326	P313	Viscous friction at GSEL condition	Value setting	0 to 999999999	
R0327					
R0328	P314	Absolute position accuracy compensation function selection	Value setting	0 to 2	
R0329					
R0330	P315	Position loop gain at GSEL3	Value setting	0 to 9999	
R0331					
R0332	P316	Servo lock gain at GSEL3	Value setting	0 to 9999	
R0333					
R0334	P317	Active vibration control filter center frequency	Value setting	0 to 4999	
R0335					
R0336	P318	Active vibration control filter bandwidth	Value setting	0 to 4999	
R0337					
R0338	P319	Active vibration control filter ineffective range	Value setting	0.00 to 100.00	
R0339					

Table 2-12 Run operation parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range	
R0340 R0341	P400	Jog speed 1	Value setting	1 to 99999999	
R0342 R0343	P401	Jog speed 2	Value setting	1 to 99999999	
R0344	P402	Zero return method selection	Number selection	0:STD.HOME	1:LS LESS
R0345				2:STOP HOME	3:OT HOME
R0346 R0347	P403	Zero point maker selecting	Number selection	0:ENC.MARK 1:NON.MARK	
R0348 R0349	P404	Zero return speed	Value setting	1 to 99999999	
R0350 R0351	P405	Zero return creep speed	Value setting	1 to 99999999	
R0352 R0353	P406	Zero return position constant	Value setting	0 to 99999999	
R0354 R0355	P407	Zero return set distance	Value setting	-99999999 to 99999999	
R0356 R0357	P408	Position data reference point	Value setting	-99999999 to 99999999	
R0358 R0359	P409	Automatic run permission condition selection	Number selection	0:AUTO.N 1:AUTO.Y	
R0360 R0361	P410	OT back zero return at OT deceleration time	Value setting	0.00 to 99.99	
R0362 R0363	P411	External trigger level selection	Number selection	0:TRG.EDGE 1:TRG.LEVEL	
R0364 R0365	P412	Current position set selection at power ON	Value setting	0 to 1	
R0366 R0367	P413	Code switching position in one rotation range	Value setting	0 to 99999999	
R0368 R0369	----	Reserved			
R0370 R0371	P415	Speed loop gain at GSEL2	Value setting	0 to 9999	
R0372 R0373	P416	Speed loop integral time constant at GSEL2	Value setting	0 to 9999.99	
R0374 R0375	P417	Speed loop differential time constant at GSEL2	Value setting	-9999 to 9999	
R0376 R0377	P418	Speed loop proportional gain division ratio at GSEL2	Value setting	-100.0 to 100.0	
R0378 R0379	P419	Speed loop differential gain division ratio at GSEL2	Value setting	-100.0 to 100.0	

Table 2-13 Display, edit, and communication parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range		
R0380 R0381	P500	Manufacturer exclusive use				
R0382 R0383	P501	Manufacturer exclusive use				
R0384 R0385	P502	LCD current position display selection	Number selection	0:ABSOLUTE 2:INCREMENT 4:ENC.FB	1:MACHINE 3:ABS.ENC	
R0386 to R0389	----	Reserved				
R0390 R0391	P505	Communication unit number selection	Value setting	0 to 9		
R0392 R0393	P506	Communication ID number	Value setting	0 to 16		
R0394 R0395	P507	Data length selection (serial communication)	Number selection	0:7 BITS 1:8 BITS		
R0396 R0397	P508	Parity selection (serial communication)	Number selection	0:NONE 2:EVEN	1:ODD	
R0398 R0399	P509	Baud rate selection (serial communication)	Number selection	0:4.8K 3:56K	1:9.6K	2:19.2K
R0400 R0401	P510	Manufacturer exclusive use				
R0402 R0403	P511	Communication group-ID set 1	Value setting	0 to 255		
R0404 R0405	P512	Communication group response Yes/No 1	Number selection	0:RESP.OFF 1:RESP. ON		
R0406 R0407	P513	Communication group-ID set 2	Value setting	0 to 255		
R0408 R0409	P514	Communication group response Yes/No 2	Number selection	0:RESP.OFF 1:RESP. ON		
R0410 R0411	P515	Communication group-ID set 3	Value setting	0 to 255		
R0412 R0413	P516	Communication group response Yes/No 3	Number selection	0:RESP.OFF 1:RESP. ON		
R0414 R0415	P517	Communication group-ID set 4	Value setting	0 to 255		
R0416 R0417	P518	Communication group response Yes/No 4	Number selection	0:RESP.OFF 1:RESP. ON		
R0418 R0419	P519	Communication group-ID set 5	Value setting	0 to 255		
R0420 R0421	P520	Communication group response Yes/No 5	Number selection	0:RESP.OFF 1:RESP. ON		
R0422 R0423	P521	Servo control communication ID number	Value setting	0 to 8		
R0424 R0425	P522	Servo control communication control mode	Number selection	0:PULSE 1:CNTRL		
R0426 R0427	P523	Alarm stop selection at servo control communication stopped	Number selection	0:NON ALM 1:ALM		

Table 2-14 Display, edit, and communication parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0428 R0429	P524	Servo control communication real time data 1 device number	Value setting	0 to 29999
R0430 R0431	P525	Servo control communication real time data 2 device number	Value setting	0 to 29999
R0432 R0433	P526	Servo control communication real time data 3 device number	Value setting	0 to 29999
R0434 R0435	P527	Servo control communication real time data 4 device number	Value setting	0 to 29999
R0436 R0437	P528	Servo control communication real time data 5 device number	Value setting	0 to 29999
R0438 R0439	P529	Manufacturer exclusive use		
R0440 R0441	P530	Remote write area 5	Value setting	0 to 29999
R0442 R0443	P531	Remote write area 6	Value setting	0 to 29999
R0444 R0445	P532	Manufacturer exclusive use		
R0446 R0447	P533	External input ON fixed selection 1	Value setting	0 to 268435455
R0448 R0449	P534	External input ON fixed selection 2	Value setting	0 to 268435455
R0450 R0451	P535	External input OFF fixed selection 1	Value setting	0 to 268435455
R0452 R0453	P536	External input OFF fixed selection 2	Value setting	0 to 268435455
R0454 R0455	P537	Manufacturer exclusive use		
R0456 to R0459	----	Reserved		

Table 2-15 Pulse train input parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0460	P600	CIH signal function selection	Number selection	0:CIH CLOSE / 1:CIH OPEN
R0461				2:PFB CLOSE / 3:PFB OPEN
R0462	P601	Pulse train command phase order switch	Number selection	0:FORWARD
R0463				1:REVERSE
R0464	P602	Pulse train command type selection	Number selection	0:X1 / 1:X2 / 2:X4
				3:F/R PULSE / 4:P + F/R
R0465				5:ID0.FCRC / 6:ID0.CMNDP
				7:ID0.MTENC
R0466	P603	Pulse train command adjustment numerator	Value setting	1 to 99999999
R0467				
R0468	P604	Pulse train command adjustment denominator	Value setting	1 to 99999999
R0469				
R0470	P605	Pulse train feed forward ratio	Value setting	0.0 to 120.0
R0471				
R0472	P606	Pulse train feed forward shift ratio	Value setting	0.0 to 100.0
R0473				
R0474	P607	Pulse train feed forward filter time constant	Value setting	0.0 to 100.0
R0475				
R0476	P608	Pulse train late compensating time	Value setting	0.0 to 1000.0
R0477				
R0478	P609	Pulse train leveling filter time	Value setting	0.0 to 1000.0
R0479				
R0480	P610	Pulse train command input selection when connecting to expansion board	Number selection	0:EXT
R0481				1:STD
R0482 to R0489	----	Reserved		
R0490	P615	Speed loop gain at GSEL3	Value setting	0 to 9999
R0491				
R0492	P616	Speed loop integral time constant at GSEL3	Value setting	0.00 to 9999.99
R0493				
R0494	P617	Speed loop differential time constant at GSEL3	Value setting	-9999 to 9999
R0495				
R0496	P618	Speed loop proportional gain division ratio at GSEL3	Value setting	-100.0 to 100.0
R0497				
R0498	P619	Speed loop differential gain division ratio at GSEL3	Value setting	-100.0 to 100.0
R0499				

Table 2-16 Input/output signal parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0500 R0501	P700	Monitor 1 selection	Number selection	0:SPD.REF. / 1:SPD.FB. 2:TRQ.REF. / 3:TRQ.LIM.+ 4:TRQ.LIM.- / 5:P.RANGE.L 6:P.RANGE.H / 7:SPD.OUT 8:SCL.OUT / 9:IX62 10:IX63 / 11:OPT.W 12:OPT.L
R0502 R0503	P701	Monitor 2 selection		
R0504 R0505	P702	Speed zero detecting range	Value setting	0.00 to 100.00
R0506 R0507	P703	Rough matching range	Value setting	1 to 99999999
R0508 R0509	P704	Servo ON signal logic selection	Number selection	0:SERVO ON 1:SHUT OFF
R0510 R0511	P705	Hardware OT effective/ineffective selection	Number selection	0:OT.CHK.Y 1:OT.CHK.N
R0512 R0513	P706	Mode change check delay time	Value setting	0.00 to 9.99
R0514 R0515	P707	Soft limit switch position 1	Value setting	-99999999 to 99999999
R0516 R0517	P708	Soft limit switch position 2	Value setting	-99999999 to 99999999
R0518 R0519	P709	Soft limit switch position 3	Value setting	-99999999 to 99999999
R0520 R0521	P710	Stopping method at emergency stop	Number selection	0:FREE RUN 1:QUICK
R0522 R0523	P711	Deceleration time at emergency stop	Value setting	0.00 to 50.00
R0524 R0525	P712	Servo off delay time after emergency stop	Value setting	0.00 to 9.99
R0526 R0527	P713	Stopping method at AC power cut	Number selection	0:FREE RUN 1:QUICK
R0528 R0529	P714	ALM output selection at AC power cut	Number selection	0:ALM.OFF 1:ALM.ON
R0530 R0531	P715	ALM/WNG signal logic selection	Number selection	0:ALM/WNG1 / 1:ALM/WNG2 2:ALM/WNG3 / 3:ALM/WNG4
R0532 R0533	P716	RDY signal specification selection	Number selection	0:RDY1 / 1:RDY2 2:RDY3 / 3:RDY4
R0534 R0535	P717	Manufacturer exclusive use		
R0536 R0537	P718	PN signal delay time	Value setting	0.000 to 9.999
R0538 R0539	P719	PN signal specification selection	Number selection	0:PN1 1:PN2

Table 2-17 Input/output signal parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range
R0540 R0541	P720	Remote write data 1	Value setting	00000 to 29999
R0542 R0543	P721	Remote write data 2	Value setting	00000 to 29999
R0544 R0545	P722	Remote write data 3	Value setting	00000 to 29999
R0546 R0547	P723	Remote write data 4	Value setting	00000 to 29999
R0548 R0549	P724	Remote read data 1	Value setting	00000 to 29999
R0550 R0551	P725	Remote read data 2	Value setting	00000 to 29999
R0552 R0553	P726	Remote read data 3	Value setting	00000 to 29999
R0554 R0555	P727	Remote read data 4	Value setting	00000 to 29999
R0556 R0557	P728	Remote read data 5	Value setting	00000 to 29999
R0558 R0559	P729	Remote read data 6	Value setting	00000 to 29999
R0560 R0561	P730	Manufacturer exclusive use		
R0562 R0563	P731	Manufacturer exclusive use		
R0564 R0565	P732	Manufacturer exclusive use		
R0566 R0567	P733	Manufacturer exclusive use		
R0568 R0569	P734	Brake output signal delay time	Value setting	0.00 to 9.99

Table 2-18 Input/output signal parameters

Device No.	Parameter No.	Parameter name	Setting method	Setting range	
R0570 R0571	P735	External input invalid selection 1	Value setting	0 to 268435455	
R0572 R0573	P736	External input invalid selection 2	Value setting	0 to 268435455	
R0574 R0575	P737	Basic external input signal function allocation 1	Value setting	0 to 99999999	
R0576 R0577	P738	Basic external input signal function allocation 2	Value setting	0 to 99999999	
R0578 R0579	P739	Extended external input signal function allocation 1	Value setting	0 to 99999999	
R0580 R0581	P740	Extended external input signal function allocation 2	Value setting	0 to 99999999	
R0582 R0583	P741	Extended external input signal function allocation 3	Value setting	0 to 99999999	
R0584 R0585	P742	Basic external output signal function allocation	Value setting	0 to 99999999	
R0586 R0587	P743	Extended output signal function allocation 1	Value setting	0 to 99999999	
R0588 R0589	P744	Extended output signal function allocation 2	Value setting	0 to 99999999	
R0590 R0591	P745	Dynamic brake function selection	Number selection	0:INVALID 2:DMB OFF	1:DMB ON
R0592 R0593	P746	Servo on delay time at dynamic brake	Value setting	0 to 10	
R0594 R0595	P747	Servo control abnormality detection adjustment value	Value setting	-1000 to 1000	
R0596 R0597	P748	Manufacturer exclusive use			
R0598 to R0799	----	Reserved			

Chapter 3 Command data

3-1 Setting data in the command area

You can edit the command data of the servo controller by "reading" and "writing" the data using the "R devices".

The number of times that you can write to the R devices in the command area is limited to 10000.

The addresses of the command area are "0" to "279", and 280 command data values can be set.

The length of an address is fixed to 10 words (one word is 16 bits long).

3-2 Command area list

Table 3-1 Command area list

Device No.	Command data address
R0800 to R0809	0
R0810 to R0819	1
R0820 to R0829	2
R0830 to R0839	3
R0840 to R0849	4
R0850 to R0859	5
R0860 to R0869	6
R0870 to R0879	7
R0880 to R0889	8
R0890 to R0899	9
R0900 to R0909	10
R0910 to R0919	11
R0920 to R0929	12
R0930 to R0939	13
R0940 to R0949	14
R0950 to R0959	15
R0960 to R0969	16
⋮	
R3590 to R3599	279

3-3 Command data structure

Table 3-2 Command data structure

<table>
<tr><th>Device No.</th><th colspan="4">Item (bit)
F E D C B A 9 8 7 6 5 4 3 2 1 0</th><th>Setting outline</th></tr>
<tr><td>R0800</td><td colspan="2">1)
[Command code]</td><td colspan="2">2)
[Indirect specification flag]</td><td></td></tr>
<tr><td>R0801</td><td>3)
[DT5]</td><td>[DT6]</td><td>[DT7]</td><td>[DT8]</td><td>DT5: INC/ABS specification
DT6: Acceleration/ deceleration selection
DT7: Reserved
DT8: Common/M output</td></tr>
<tr><td>R0802</td><td colspan="4" rowspan="2">(Upper order data)
4) [DT0]
(Lower order data)</td><td rowspan="2">Position data, etc.</td></tr>
<tr><td>R0803</td></tr>
<tr><td>R0804</td><td colspan="4" rowspan="2">(Upper order data)
4) [DT1]
(Lower order data)</td><td rowspan="2">Speed data, etc.</td></tr>
<tr><td>R0805</td></tr>
<tr><td>R0806</td><td colspan="4" rowspan="2">(Upper order data)
4) [DT2]
(Lower order data)</td><td rowspan="2">External trigger position data, time data, etc.</td></tr>
<tr><td>R0807</td></tr>
<tr><td>R0808</td><td colspan="4">5) [DT3]</td><td>Common/M output data, transfer destination data, etc.</td></tr>
<tr><td>R0809</td><td colspan="4">5) [DT4]</td><td>Repetition number data, condition judgment data, etc.</td></tr>
</table>

Command data

1) Command codes

A command code is hexadecimal data that uses the upper eight bits of a device.

It sets a code (command code) that represents a specific command.

For the correspondence between commands and codes, refer to Table 3-3 Command code list.

Table 3-3 Command code list

Command		Code	Command		Code
NOP	No operation	00H	TRQ	Torque control	40H
POS	Positioning	01H	SPD	Speed control	41H
HOME	Zero return	02H	SPNS	Spin speed	50H
INDX	Index positioning	03H	SPNT	Spin timer	51H
M	M output	10H	SPNP	Spin positioning	52H
TIME	Timer	11H	SPOS	Positioning	53H
PEND	Program end	12H	CONT	Simple successive positioning	54H
CALL	Sub routine call	13H	REPT	Repeat positioning	55H
RET	Sub routine return	14H	SHOM	Zero return	56H
GSEL	Gain select	15H	SIND	Index positioning	57H
IMOV	Transfer	20H	CPOS	Successive position control	60H
ADD	Addition	21H	CTRQ	Successive torque control	61H
SUB	Subtraction	22H	CSPD	Successive speed control	62H
MUL	Multiplication	23H	CEND	Successive control end	63H
DIV	Division	24H			
AND	Logical multiplication	25H			
OR	Logical addition	26H			
XOR	Exclusive logical addition	27H			
JMP	Unconditional jump	30H			
JZ	Zero jump	31H			
JNZ	Jump other than zero	32H			
JG	Jump 1 or more	33H			
JL	Jump -1 or less	34H			

2) Indirect specification flag

An indirect specification flag is hexadecimal data that uses the lower eight bits of a device.
It specifies the setting method for the data of DT0 to DT4.

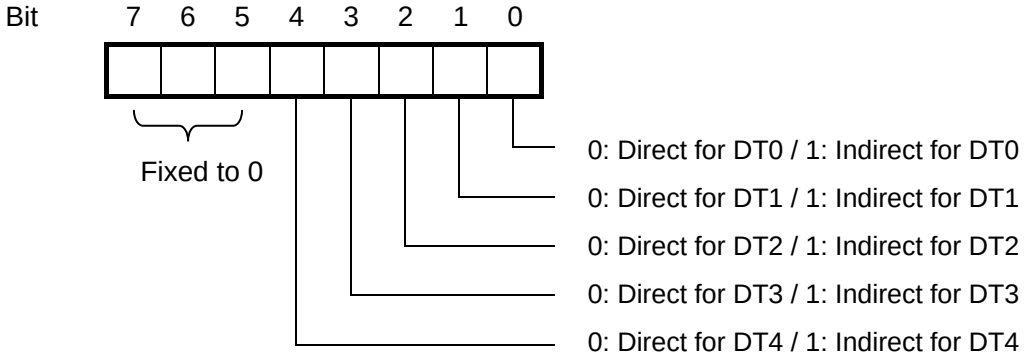
The flag specifies either of the following two methods:

Direct: Numeric data is set directly in the data areas from DT0 to DT4.

Indirect: Indirect data is assigned to the data areas from DT0 to DT4.

In the case of indirect specification, indirect data numbers are set in the data areas from DT0 to DT4.
The bits of the indirect specification flag are as follows.

◇Details of the indirect specification flag



<Example>

[Command address] : 0 → <Device No. R0800>

[Command code] : Positioning (POS) → 01H

[Indirect specification flag] : Positioning data (DT0) = Assign indirect data → 1
Speed data (DT1) = Assign indirect data → 1
External trigger position data (DT2) = Set numeric data directly →0
Common output data (DT3) = Set numeric data directly →0
(Not used) (DT4) = Fixed to 0 → 0

Bit 7 6 5 4 3 2 1 0
0 0 0 0 0 0 1 1 → 03H

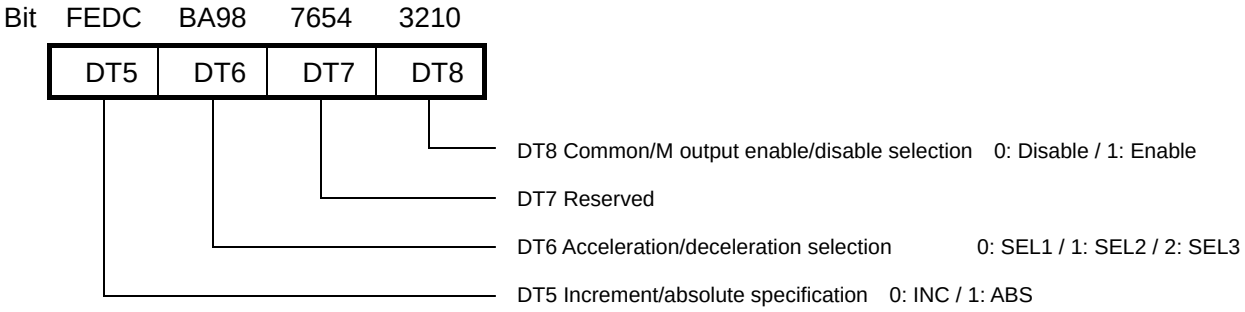
Device No.	Set data
R0800	0103 H

Command data

3) DT5 to DT8

DT5 to DT8 are 4-bit-long hexadecimal data obtained by dividing a device into four.
The contents of the settings are as follows.

◇Details of the DT5 to DT8 settings



<Example>

[Command address]: 0 → <Device No. R0801>

[DT5] Increment/absolute specification → 〔1:ABS 〕→ 1 → Bit F E D C 0 0 0 1 → 1 H

[DT6] Acceleration/deceleration selection →〔2: SEL3 〕→ 2 → Bit B A 9 8 0 0 1 0 → 2 H

[DT7] Reserved

[DT8] Common/M output enable/disable selection → 〔1: Enable 〕→ 1 → Bit 3 2 1 0 0 0 0 1 → 1 H

Device No.	Set data
R 0 8 0 1	1 2 0 1 H

4) DT0 to DT2

DT0 to DT2 are 32-bit-long hexadecimal data, each using two devices.

One of the following two setting methods is used depending on the value specified in [Indirect specification flag].

《0: When Direct is specified for DT0 to DT2》

Signed hexadecimal data ignoring the decimal point is set.

《1: When Indirect is specified for DT0 to DT2》

The "indirect data number" of indirect data is set (converted to hexadecimal when set).

<Example 1>

<0: When Direct is specified for DT0 to DT2>
[DT0]: Positioning position data = 10000.00 mm
[Command address]:0 → <Device Nos. R0802, R0803>

10000.00 (Decimal)	→	1000000 (Decimal)	→	F4240H (Hexadecimal)	→	000F4240H	→

Set data

Upper	Lower
R0802	R0803
000FH	4240H

Ignore decimal point — Convert to hexadecimal — 32-bit-long data (8 digits in hexadecimal)

Device No.	Set data
R0802	000F H
R0803	4240 H

<Example 2>

<1: When Indirect is specified for DT0 to DT2>
[DT0]: Positioning position data = Indirect data No. IX10 Indirect data 10
[Command address]: 0 → <Device Nos. R0802, R0803>

IX10 (No. 10)	→	10 (Decimal)	→	A H (Hexadecimal)	→	0000000AH	→

Set data

Upper	Lower
R0802	R0803
0000H	000AH

Convert to hexadecimal — 32-bit-long data (8 digits in hexadecimal)

Device No.	Set data
R0802	0000 H
R0803	000A H

Command data

5) DT3 and DT4

DT3 and DT4 are 16-bit-long hexadecimal data, each using one device.

One of the following two setting methods is used depending on the value specified in [Indirect specification flag].

《0: When Direct is specified for DT3 and DT4》

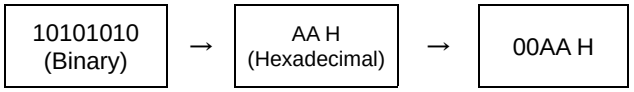
Signed hexadecimal data ignoring the decimal point is set.

《1: When Indirect is specified for DT3 and DT4》

The "indirect data number" of indirect data is set (converted to hexadecimal when set).

<Example 1>

<0: When Direct is specified for DT3>
[DT3]: Common output data = 10101010 (binary)
[Command address]:0 → <Device No.R0808>

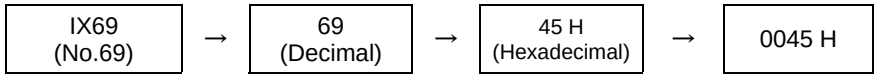


Convert to hexadecimal　　16-bit-long data (4 digits in hexadecimal)

Device No.	Set data
R 0 8 0 8	0 0 A A H

<Example 2>

<1: When Indirect is specified for DT3>
[DT3]: Common output data = Indirect data No. IX69　Indirect data 69
[Command address]:0 → <Device No.R0808>



Convert to hexadecimal　　16-bit-long data (4 digits in hexadecimal)

Device No.	Set data
R 0 8 0 8	0 0 4 5 H

3-4 Command data structure list

In each individual command data format, data is assigned according to the Command data structure shown below.

Table 3-4 Command data structure list

Command name	Code	Flag	DT0	DT1	DT2	DT3	DT4	DT5	DT6	DT7	DT8
NOP	00H	×	×	×	×	×	×	×	×	×	×
POS	01H	●	Position	Speed	Trigger	OUT	×	I/A	U/D	×	Enable/disable
HOME	02H	●	DIR	TYPE	×	OUT	×	×	×	×	Enable/disable
INDX	03H	●	Position	Speed	×	OUT	×	×	U/D	×	Enable/disable
M	10H	●	×	×	×	M	×	×	×	×	Enable/disable
TIME	11H	●	×	×	Timer	OUT	×	×	×	×	Enable/disable
PEND	12H	×	×	×	×	×	×	×	×	×	×
CALL	13H	●	×	×	×	ADDR	RPT.	×	×	×	×
RET	14H	×	×	×	×	×	×	×	×	×	×
GSEL	15H	×	×	×	Timer	×	×	×	SEL	×	×
IMOV	20H	●	Source	×	×	Destination	×	×	×	×	×
ADD	21H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
SUB	22H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
MUL	23H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
DIV	24H	●	Source 1	Source 2	×	Destination 1	Destination 2	×	×	×	×
AND	25H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
OR	26H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
XOR	27H	●	Source 1	Source 2	×	Destination	×	×	×	×	×
JMP	30H	●	×	×	×	ADDR	×	×	×	×	×
JZ	31H	●	×	×	×	ADDR	Condition	×	×	×	×
JNZ	32H	●	×	×	×	ADDR	Condition	×	×	×	×
JG	33H	●	×	×	×	ADDR	Condition	×	×	×	×
JL	34H	●	×	×	×	ADDR	Condition	×	×	×	×
TRQ	40H	●	×	Torque	×	M	×	×	×	×	Enable/disable
SPD	41H	●	×	Speed	×	M	×	×	×	×	Enable/disable
SPNS	50H	●	×	Rotation	Time	M	×	×	×	×	Enable/disable
SPNT	51H	●	×	×	Time	M	×	×	×	×	Enable/disable
SPNP	52H	●	Position	×	×	M	×	×	U/D	×	Enable/disable
SPOS	53H	●	Position	Speed	Trigger	OUT	×	I/A	U/D	×	Enable/disable
CONT	54H	●	Position	Speed	Trigger	OUT	×	I/A	U/D	×	Enable/disable
REPT	55H	●	Position	Speed	Trigger	M	RPT.	I/A	U/D	×	Enable/disable
SHOM	56H	●	DIR	TYPE	×	OUT	×	×	×	×	Enable/disable
SIND	57H	●	Position	Speed	×	OUT	×	×	U/D	×	Enable/disable
CPOS	60H	●	Position	Speed	Trigger	OUT	Condition	I/A	U/D	×	Enable/disable
CTRQ	61H	●	Command	Limit	Trigger	OUT	Condition	×	×	×	Enable/disable
CSPD	62H	●	Limit	Command	Trigger	OUT	Condition	×	×	×	Enable/disable
CEND	63H	●	×	×	×	OUT	×	×	×	×	Enable/disable

●: To be set
×: Data not used; 0 is to be set.
■: Data for which to select direct or indirect
□: Data for which only direct is to be specified
□: Data for which only indirect is to be specified

3-5 Command data

The device numbers corresponding to the individual command data items start with the start device number of a specified command data address.

<Example>
When the command data address is "0", the start device number is "R0800". The device numbers of the command data are {[Start No.] + 0 = R0800} to {[Start No.] + 9 = R0809}.
Note that Table 3-5 to Table 3-41 below assume that the command data address is "0" and that the start number is "R0800".
For information about setting command data in other addresses, refer to Table 3-1 Command area list.

Table 3-5 No operation command (NOP)

Device No. <Example>	Device No.	Item / Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 0 0 H		Indirect specification flag: Set 0 (Not used).	
R0801	[Start No.] + 1	DT5: Set 0 (Not used).	DT6: Set 0 (Not used).	DT7: Set 0 (Not used).	DT8: Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Set 0 (Not used).			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-6 Positioning command (POS)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8	7 6 5 4 3 2 1 0
R0800	[Start No.] + 0	Command code: 0 1 H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 0:INC 1:ABS DT6 Acceleration/ deceleration selection 0:SEL1 1:SEL2 2:SEL3	DT7 Set 0 (Not used). DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data	
R0803	[Start No.] + 3	Lower order data	
R0804	[Start No.] + 4	DT1: Speed data Upper order data	
R0805	[Start No.] + 5	Lower order data	
R0806	[Start No.] + 6	DT2: External trigger position data Upper order data	
R0807	[Start No.] + 7	Lower order data	
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)	
R0809	[Start No.] + 9	DT4: Set 0 (Not used).	

Command data

Table 3-7 Zero return command (HOME)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 02H			Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Only direct specification for DT0 1 : Only direct specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Zero return direction selection 0: FORWARD 1: REVERSE		For the upper order data, set 0. For the lower order data, set one of the values shown at left.	
R0803	[Start No.] + 3				
R0804	[Start No.] + 4	DT1: Zero return method selection 0: STD HOME 1: LS LESS 2: STOP HOME 3:OT HOME		For the upper order data, set 0. For the lower order data, set one of the values shown at left.	
R0805	[Start No.] + 5				
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-8 Index positioning (INDX)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 0 3 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-9 M output command (M)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 1 0 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-10 Timer command (TIME)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 1 1 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used). Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Set 0 (Not used). Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Timer data Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-11 Program end command (PEND)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 1 2 H		Indirect specification flag: Set 0 (Not used).	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Set 0 (Not used).			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-12 Sub routine call command (CALL)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 1 3 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Call destination address data			
R0809	[Start No.] + 9	DT4: Repetition number data			

Command data

Table 3-13 Sub routine return command (RET)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 1 4 H		Indirect specification flag: Set 0 (Not used).	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Set 0 (Not used).			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-14 Gain select command (GSEL)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 15H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 2 : Direct/indirect specification for DT2 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Gain select 0: SEL 1: ON 2: OFF 3: GSEL2 4: GSEL3	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Timer data			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Set 0 (Not used).			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-15 Transfer command (IMOV)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 20H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 3 : Only indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Set 0 (Not used). Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-16 Addition command (ADD)

Device No. <Example>	Device No.	Item / Bit F E D C B A 9 8	7 6 5 4 3 2 1 0
R0800	[Start No.] + 0	Command code: 2 1 H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used). DT7 Set 0 (Not used). DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (addition element 1) Upper order data	
R0803	[Start No.] + 3	Lower order data	
R0804	[Start No.] + 4	DT1: Transfer source data (addition element 2) Upper order data	
R0805	[Start No.] + 5	Lower order data	
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data	
R0807	[Start No.] + 7	Lower order data	
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.	
R0809	[Start No.] + 9	DT4: Set 0 (Not used).	

Table 3-17 Subtraction command (SUB)

Device No. <Example>	Device No.	(Bit) Item F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 22H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (subtraction element 1) Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Transfer source data (subtraction element 2) Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-18 Multiplication command (MUL)

Device No. <Example>	Device No.	Item / Bit F E D C B A 9 8	7 6 5 4 3 2 1 0
R0800	[Start No.] + 0	Command code: 23H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used). / DT7 Set 0 (Not used). / DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (multiplication element 1)	Upper order data
R0803	[Start No.] + 3		Lower order data
R0804	[Start No.] + 4	DT1: Transfer source data (multiplication element 2)	Upper order data
R0805	[Start No.] + 5		Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).	Upper order data
R0807	[Start No.] + 7		Lower order data
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.	
R0809	[Start No.] + 9	DT4: Set 0 (Not used).	

Command data

Table 3-19 Division command (DIV)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 2 4 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 4 : Only indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (division element 1) Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Transfer source data (division element 2) Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Division remainder transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Division quotient transfer destination indirect data No.			

Table 3-20 Logical multiplication command (AND)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 25H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (AND element 1) Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Transfer source data (AND element 2) Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-21 Logical addition command (OR)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 2 6 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (OR element 1) Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Transfer source data (OR element 2) Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-22 Exclusive logical addition (XOR)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 27H			Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Only indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Transfer source data (XOR element 1) Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Transfer source data (XOR element 2) Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Transfer destination indirect data No.			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-23 Unconditional jump command (JMP)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 3 0 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Jump destination address data			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-24 Zero jump command (JZ)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0	
R0800	[Start No.] + 0	Command code: 3 1 H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used). DT7 Set 0 (Not used). DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).	Upper order data
R0803	[Start No.] + 3		Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).	Upper order data
R0805	[Start No.] + 5		Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).	Upper order data
R0807	[Start No.] + 7		Lower order data
R0808	[Start No.] + 8	DT3: Jump destination address data	
R0809	[Start No.] + 9	DT4: Condition judgment indirect data No.	

Table 3-25 Jump other than zero command (JNZ)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 32H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Jump destination address data			
R0809	[Start No.] + 9	DT4: Condition judgment indirect data No.			

Table 3-26 Jump 1 or more command (JG)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 3 3 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Jump destination address data			
R0809	[Start No.] + 9	DT4: Condition judgment indirect data No.			

Table 3-27 Jump -1 or less command (JL)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 3 4 H			Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Set 0 (Not used).
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Jump destination address data			
R0809	[Start No.] + 9	DT4: Condition judgment indirect data No.			

Table 3-28 Torque control command (TRQ)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 4 0 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 1 : Direct/indirect specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used). Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Torque data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-29 Speed control command (SPD)

Device No. <Example>	Device No.	Item F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 4 1 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 1 : Direct/indirect specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Speed data			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-30 Spin speed command (SPNS)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 50H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used). Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Rotation speed data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Rotation speed reach time data Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-31 Spin timer command (SPNT)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 5 1 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Sustaining time data			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-32 Spin positioning command (SPNP)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 52H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 M output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Set 0 (Not used). Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-33 Positioning command (SPOS)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 53H			Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 0:INC 1:ABS	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: External trigger position data Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-34 Simple successive positioning command (CONT)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8	7 6 5 4 3 2 1 0
R0800	[Start No.] + 0	Command code: 54H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 0:INC 1:ABS	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3 DT7 Set 0 (Not used). DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data	
R0803	[Start No.] + 3	Lower order data	
R0804	[Start No.] + 4	DT1: Speed data Upper order data	
R0805	[Start No.] + 5	Lower order data	
R0806	[Start No.] + 6	DT2: External trigger position data Upper order data	
R0807	[Start No.] + 7	Lower order data	
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)	
R0809	[Start No.] + 9	DT4: Set 0 (Not used).	

Table 3-35 Repeat positioning command (REPT)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 5 5 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4	
R0801	[Start No.] + 1	DT5 0:INC 1:ABS	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: External trigger position data Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: M output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Repetition number data			

Table 3-36 Zero return command (SHOM)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 56H			Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Only direct specification for DT0 1 : Only direct specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Zero return direction selection 0: FORWARD 1: REVERSE For the upper order data, set 0. For the lower order data, set one of the values shown at left.			
R0803	[Start No.] + 3				
R0804	[Start No.] + 4	DT1: Zero return method selection 0: STD HOME 1: LS LESS 2: STOP HOME 3: OT HOME For the upper order data, set 0. For the lower order data, set one of the values shown at left.			
R0805	[Start No.] + 5				
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Command data

Table 3-37 Index positioning command (SIND)

Device No. <Example>	Device No.	Item F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 57H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Positioning position data Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed data Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: Set 0 (Not used). Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output data (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Table 3-38 Successive position control command (CPOS)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 6 0 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 0:INC 1:ABS	DT6 Acceleration/ deceleration selection 0: SEL1 1: SEL2 2: SEL3	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Position and positioning direction Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: External trigger delay distance Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Internal end condition			

Table 3-39 Successive torque control command (CTRQ)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 61H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Torque command Upper order data			
R0803	[Start No.] + 3	Lower order data			
R0804	[Start No.] + 4	DT1: Speed limit Upper order data			
R0805	[Start No.] + 5	Lower order data			
R0806	[Start No.] + 6	DT2: External trigger delay distance Upper order data			
R0807	[Start No.] + 7	Lower order data			
R0808	[Start No.] + 8	DT3: Common output (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Internal end condition			

Table 3-40 Successive speed control command (CSPD)

Device No. <Example>	Device No.	Item / Bit F E D C B A 9 8	7 6 5 4 3 2 1 0
R0800	[Start No.] + 0	Command code: 62H	Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 0 : Direct/indirect specification for DT0 1 : Direct/indirect specification for DT1 2 : Direct/indirect specification for DT2 3 : Direct/indirect specification for DT3 4 : Direct/indirect specification for DT4 In cases other than the above, set 0.
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Torque limit Upper order data	
R0803	[Start No.] + 3	Lower order data	
R0804	[Start No.] + 4	DT1: Speed command Upper order data	
R0805	[Start No.] + 5	Lower order data	
R0806	[Start No.] + 6	DT2: External trigger delay distance Upper order data	
R0807	[Start No.] + 7	Lower order data	
R0808	[Start No.] + 8	DT3: Common output (Only bits 0 to 7 are used.)	
R0809	[Start No.] + 9	DT4: Internal end condition	

Command data

Table 3-41 Successive control end command (CEND)

Device No. <Example>	Device No.	Item Bit F E D C B A 9 8 7 6 5 4 3 2 1 0			
R0800	[Start No.] + 0	Command code: 6 3 H		Indirect specification flag Bit 0: Direct specification, 1: Indirect specification 3 : Direct/indirect specification for DT3 In cases other than the above, set 0.	
R0801	[Start No.] + 1	DT5 Set 0 (Not used).	DT6 Set 0 (Not used).	DT7 Set 0 (Not used).	DT8 Common output 0: Disable 1: Enable
R0802	[Start No.] + 2	DT0: Set 0 (Not used).			Upper order data
R0803	[Start No.] + 3				Lower order data
R0804	[Start No.] + 4	DT1: Set 0 (Not used).			Upper order data
R0805	[Start No.] + 5				Lower order data
R0806	[Start No.] + 6	DT2: Set 0 (Not used).			Upper order data
R0807	[Start No.] + 7				Lower order data
R0808	[Start No.] + 8	DT3: Common output (Only bits 0 to 7 are used.)			
R0809	[Start No.] + 9	DT4: Set 0 (Not used).			

Chapter 4 Indirect data

4-1 Setting data in the indirect data area

You can edit the indirect data area of the servo controller by "reading" indirect data from and "writing" indirect data to the "R devices" corresponding to relevant indirect data numbers.
There are 100 indirect data numbers from IX00 to IX99.
The number of times that you can rewrite IX00 to IX49 is limited to 10000.
Two device numbers are assigned to each set of indirect data, and a set of indirect data is 32 bits long. (A device number is 16 bits long.)

The upper/lower relationship between the two device numbers is as shown in Table 4-1.

Table 4-1 Data structure of the indirect data area

Device No.	Indirect data No.	Set data	
R3600	IX00	Upper	Lower
R3601		R3600	R3601

The data to be set in this area is 32-bit-long signed hexadecimal data ignoring the decimal point.

Table 4-2 Examples of data set in the indirect data area

Device No.	Indirect data No.	Set value (example)
R3600	IX00	10000.00 mm
R3601		

Set data

Upper	Lower
R3600	R3601
000FH	4240H

10000.00 (Decimal) → 1000000 (Decimal) → F4240H (Hexadecimal) → 000F4240H (Hexadecimal) →

Ignore decimal point — Convert to hexadecimal — 32-bit-long data (8 digits in hexadecimal)

Device No.	Indirect data No.	Set value (example)
R3620	IX10	-100.0 mm
R3621		

Set data

Upper	Lower
R3620	R3621
FFFFH	FC18H

-100.0 (Decimal) → -1000 (Decimal) → FFFFFC18H (Hexadecimal) → FFFFFC18H (Hexadecimal) →

Ignore decimal point — Convert to hexadecimal — 32-bit-long data (8 digits in hexadecimal)

4-2 Indirect data area list

About the Data type column

"Sustain" indicates that the indirect data is sustained in nonvolatile memory even after the power is switched off.

"Change" indicates that the indirect data may change depending on its content.

"Clear" indicates that the indirect data is cleared to 0, without its content being sustained, when the power is switched off.

(Example)

Device No.	Indirect data	Data type	Content/(purpose)
R3600	IX00	Sustain	Indirect data 0 (general-purpose)
01			
02	IX01	Sustain	Indirect data 1 (general-purpose)
03			
04	IX02	Sustain	Indirect data 2 (general-purpose)
05			
06	IX03	Sustain	Indirect data 3 (general-purpose)
07			
⋮			

Table 4-3 Indirect data area list

Device No.	Indirect data	Data type	Content/(purpose)
R3600	IX00	Sustain	Indirect data 0 (general-purpose)
01			
02	IX01	Sustain	Indirect data 1 (general-purpose)
03			
04	IX02	Sustain	Indirect data 2 (general-purpose)
05			
06	IX03	Sustain	Indirect data 3 (general-purpose)
07			
08	IX04	Sustain	Indirect data 4 (general-purpose)
09			
10	IX05	Sustain	Indirect data 5 (general-purpose)
11			
12	IX06	Sustain	Indirect data 6 (general-purpose)
13			
14	IX07	Sustain	Indirect data 7 (general-purpose)
15			
16	IX08	Sustain	Indirect data 8 (general-purpose)
17			
18	IX09	Sustain	Indirect data 9 (general-purpose)
19			
20	IX10	Sustain	Indirect data 10 (general-purpose)
21			
22	IX11	Sustain	Indirect data 11 (general-purpose)
23			
24	IX12	Sustain	Indirect data 12 (general-purpose)
25			
26	IX13	Sustain	Indirect data 13 (general-purpose)
27			
28	IX14	Sustain	Indirect data 14 (general-purpose)
29			
30	IX15	Sustain	Indirect data 15 (general-purpose)
31			
32	IX16	Sustain	Indirect data 16 (general-purpose)
33			
34	IX17	Sustain	Indirect data 17 (general-purpose)
35			
36	IX18	Sustain	Indirect data 18 (general-purpose)
37			
38	IX19	Sustain	Indirect data 19 (general-purpose)
39			

Table 4-4 Indirect data area list

Device No.	Indirect data	Data type	Content/(purpose)
R3640	IX20	Sustain	Indirect data 20 (general-purpose)
41			
42	IX21	Sustain	Indirect data 21 (general-purpose)
43			
44	IX22	Sustain	Indirect data 22 (general-purpose)
45			
46	IX23	Sustain	Indirect data 23 (general-purpose)
47			
48	IX24	Sustain	Indirect data 24 (general-purpose)
49			
50	IX25	Sustain	Indirect data 25 (general-purpose)
51			
52	IX26	Sustain	Indirect data 26 (general-purpose)
53			
54	IX27	Sustain	Indirect data 27 (general-purpose)
55			
56	IX28	Sustain	Indirect data 28 (general-purpose)
57			
58	IX29	Sustain	Indirect data 29 (general-purpose)
59			
60	IX30	Sustain	Indirect data 30 (general-purpose)
61			
62	IX31	Sustain	Indirect data 31 (general-purpose)
63			
64	IX32	Sustain	Indirect data 32 (general-purpose)
65			
66	IX33	Sustain	Indirect data 33 (general-purpose)
67			
68	IX34	Sustain	Indirect data 34 (general-purpose)
69			
70	IX35	Sustain	Indirect data 35 (general-purpose)
71			
72	IX36	Sustain	Indirect data 36 (general-purpose)
73			
74	IX37	Sustain	Indirect data 37 (general-purpose)
75			
76	IX38	Sustain	Indirect data 38 (general-purpose)
77			
78	IX39	Sustain	Indirect data 39 (general-purpose)
79			

Table 4-5 Indirect data area list

Device No.	Indirect data	Data type	Content/(purpose)
R3680	IX40	Sustain	Indirect data 40 (general-purpose)
81			
82	IX41	Sustain	Indirect data 41 (general-purpose)
83			
84	IX42	Sustain	Indirect data 42 (general-purpose)
85			
86	IX43	Sustain	Indirect data 43 (general-purpose)
87			
88	IX44	Sustain	Indirect data 44 (general-purpose)
89			
90	IX45	Sustain	Indirect data 45 (general-purpose)
91			
92	IX46	Sustain	Indirect data 46 (general-purpose)
93			
94	IX47	Sustain	Indirect data 47 (general-purpose)
95			
96	IX48	Sustain	Indirect data 48 (general-purpose)
97			
98	IX49	Sustain	Indirect data 49 (general-purpose)
99			
R3700	IX50	Clear	Indirect data 50 (general-purpose)
01			
02	IX51	Clear	Indirect data 51 (general-purpose)
03			
04	IX52	Clear	Indirect data 52 (general-purpose)
05			
06	IX53	Clear	Indirect data 53 (general-purpose)
07			
08	IX54	Clear	Indirect data 54 (general-purpose)
09			
10	IX55	Clear	Indirect data 55 (general-purpose)
11			
12	IX56	Clear	Indirect data 56 (general-purpose)
13			
14	IX57	Clear	Indirect data 57 (general-purpose)
15			
16	IX58	Clear	Indirect data 58 (general-purpose)
17			
18	IX59	Clear	Indirect data 59 (general-purpose)
19			

Table 4-6 Indirect data area list

Device No.	Indirect data	Data type	Content/(purpose)
R3720	IX60	Change	Indirect data 60 Current speed data
21			
22	IX61	Clear	Indirect data 61 (general-purpose)
23			
24	IX62	Clear	Indirect data 62 Analog monitor output value
25			
26	IX63	Clear	Indirect data 63 Analog monitor output value
27			
28	IX64	Change	Indirect data 64 Analog speed command input value
29			
30	IX65	Change	Indirect data 65 Analog torque command input value
31			
32	IX66	Change	Indirect data 66 Current position (absolute position)
33			
34	IX67	Change	Indirect data 67 Timer value/counted at 10-ms intervals (counting to be stopped at 0)
35			
36	IX68	Clear	Indirect data 68 (general-purpose)
37			
38	IX69	Change	Indirect data 69 Common output signal (OUT1 to OUT8) data
39			
40	IX70	Clear	Indirect data 70 (general-purpose)
41			
42	IX71	Clear	Indirect data 71 (general-purpose)
43			
44	IX72	Clear	Indirect data 72 (general-purpose)
45			
46	IX73	Clear	Indirect data 73 (general-purpose)
47			
48	IX74	Clear	Indirect data 74 (general-purpose)
49			
50	IX75	Clear	Indirect data 75 (general-purpose)
51			
52	IX76	Clear	Indirect data 76 (general-purpose)
53			
54	IX77	Clear	Indirect data 77 (general-purpose)
55			
56	IX78	Clear	Indirect data 78 (general-purpose)
57			
58	IX79	Clear	Indirect data 79 (general-purpose)
59			

Table 4-7 Indirect data area list

Device No.	Indirect data	Data type	Content/(purpose)
R3760	IX80	Clear	Indirect data 80 (general-purpose)
61			
62	IX81	Clear	Indirect data 81 (general-purpose)
63			
64	IX82	Clear	Indirect data 82 (general-purpose)
65			
66	IX83	Clear	Indirect data 83 (general-purpose)
67			
68	IX84	Clear	Indirect data 84 (general-purpose)
69			
70	IX85	Clear	Indirect data 85 (general-purpose)
71			
72	IX86	Clear	Indirect data 86 (general-purpose)
73			
74	IX87	Clear	Indirect data 87 (general-purpose)
75			
76	IX88	Clear	Indirect data 88 (general-purpose)
77			
78	IX89	Clear	Indirect data 89 (general-purpose)
79			
80	IX90	Clear	Indirect data 90 (general-purpose)
81			
82	IX91	Clear	Indirect data 91 (general-purpose)
83			
84	IX92	Clear	Indirect data 92 (general-purpose)
85			
86	IX93	Clear	Indirect data 93 (general-purpose)
87			
88	IX94	Clear	Indirect data 94 (general-purpose)
89			
90	IX95	Clear	Indirect data 95 (general-purpose)
91			
92	IX96	Clear	Indirect data 96 (general-purpose)
93			
94	IX97	Clear	Indirect data 97 (general-purpose)
95			
96	IX98	Clear	Indirect data 98 (general-purpose)
97			
98	IX99	Clear	Indirect data 99 (general-purpose)
99			

Chapter 5 Status data

5-1 Data format of the status data area

You can identify the operation status of the servo controller by "reading" the status data area from the "D devices".
There are two types of status data: "2-word data" and "1-word data".

1) 1-word data
One device number is assigned to 1-word data, which is signed 16-bit-long hexadecimal data ignoring the decimal point.

2) 2-word data
Two device numbers are assigned to 2-word data, which is signed 32-bit-long hexadecimal data ignoring the decimal point.

The upper/lower relationship between the two device numbers is as shown below.

Table 5-1 Data structure of the status data area

Device No.	Parameter No.	Data	
		Upper	Lower
D9126	Actual machine operation speed	D9126	D9127
D9127			

Table 5-2 Example of reading 1-word data

Device No.	Status data	Data (example)
D9011	Latest alarm No.	18 (Reverse over travel)

18 (Decimal) → 12H (Hexadecimal) → 0012H (Hexadecimal) →

Convert to hexadecimal

16-bit-long data (4 digits in hexadecimal)

Read data

D9011
0012H

Table 5-3 Example of reading 2-word data

Device No.	Status data	Data (example)
D9302	Current position (absolute position)	10000.00 mm
D9303		

10000.00 (Decimal) → 1000000 (Decimal) → F4240H (Hexadecimal) → 000F4240H (Hexadecimal) →

Ignore decimal point

Convert to hexadecimal

32-bit-long data (8 digits in hexadecimal)

Read data

Upper	Lower
D9302	D9303
000FH	4240H

5-2 Status data area list

Table 5-4 Status data area list

Device No.	Signal name	Content
D9000	Input signal status 0	Refer to 5-3 Status data area/bit list.
01	Input signal status 1	
02	Input signal status 2	
03	Input signal status 3	
04	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
05	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
06	Output signal status 0	Refer to 5-3 Status data area/bit list.
07	Output signal status 1	
08	Output signal status 2	
09	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
10	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
11	Latest alarm No.	Refer to 5-4 Alarm/warning code list.
12	Alarm No. for 2nd latest alarm	
13	Alarm No. for 3rd latest alarm	
14	Alarm No. for 4th latest alarm	
15	Alarm No. for 5th latest alarm	
16	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
17	Warning No.	Refer to 5-4 Alarm/warning code list.
18	Current alarm or warning	Refer to 5-4 Alarm/warning code list.
19	Controller-dedicated data	
20	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
21		
22	Controller-dedicated data	
23		
24	Controller-dedicated data	
25		
26	Controller-dedicated data	
27		
28	Controller-dedicated data	
29		
30	Hardware version	
31		
32	Software version	
33		
34	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
35	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
36	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
37	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
38	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
39	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
40	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
41	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
42	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
43	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
44	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
45	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
46	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
47	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
48	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
49	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-5 Status data area list

Device No.	Signal name	Content
D9050	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
51	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
52	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
53	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
54	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
55	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
56	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
57	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
58	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
59	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
60	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
61	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
62	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
63	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
64	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
65	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
66	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
67	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
68	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
69	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
70	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
71	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
72	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
73	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
74	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
75	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
76	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
77	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
78	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
79	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
80	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
81	Selected command address	Address of the command currently selected or executed
82	Data set in the command currently executed or selected The data format depends on the command in use.	
83		
84		
85		
86		
87		
88		
89		
90		
91		
92	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
93	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
94	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
95	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
96	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
97	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
98	Speed/torque selection No.	SS1/SS2 selection value
99	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-6 Status data area list

Device No.	Signal name	Content
D9100	ST00 Actual motor operation speed [%]	ST00 display data
01		
02	ST01 Current position for display	ST01 display data
03		
04	ST02 Deviation pulse [pulse]	ST02 display data
05		
06	ST03 External speed command value [rpm]	ST03 display data
07		
08	ST04 External torque command value [%]	ST04 display data
09		
10	ST05 Pulse train input frequency [×10pps]	ST05 display data
11		
12	ST06 Pulse train input accumulated value [pulse]	ST06 display data
13		
14	ST07 External + torque limit value [%]	ST07 display data
15		
16	ST08 External - torque limit value [%]	ST08 display data
17		
18	ST09 Thermal trip rate [%]	ST09 display data
19		
20	ST10 Effective load ratio (Effective load torque) [%]	ST10 display data
21		
22	ST11 Peak torque ratio [%]	ST11 display data
23		
24	ST12 Actual rotation speed of rotating object [rpm]	ST12 display data
25		
26	ST13 Actual machine operation speed [Set unit/s]	ST13 display data
27		
28	ST14 Actual motor operation speed [rpm]	ST14 display data
29		
30	ST15 Motor load ratio [%]	ST15 display data
31		
32	ST16 Load ratio of regenerative resistor [%]	ST16 display data
33		
34	ST17 Servo control error occurrence ratio [%]	ST17 display data
35		
36	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
37	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
38	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
39	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
40	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
41	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
42	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
43	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
44	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
45	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
46	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
47	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
48	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
49	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-7 Status data area list

Device No.	Signal name	Content
D9150	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
51	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
52	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
53	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
54	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
55	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
56	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
57	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
58	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
59	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
60	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
61	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
62	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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64	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
65	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
66	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
67	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
68	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
69	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
70	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
71	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
72	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
73	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
74	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
75	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
76	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
77	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
78	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
79	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
80	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
81	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
82	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
83	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
84	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
85	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
86	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
87	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
88	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
89	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
90	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
91	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
92	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
93	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
94	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
95	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
96	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
97	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
98	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
99	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-8 Status data area list

Device No.	Signal name	Content
D9200	Basic external input signal status	Refer to 5-3 Status data area/bit list.
01		
02	Extended external input signal status	
03		
04	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
05	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
06	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
07	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
08	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
09	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
10	Basic external output signal status	Refer to 5-3 Status data area/bit list.
11		
12	Extended external output signal status	
13		
14	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
15	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
16	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
17	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
18	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
19	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
20	Selection mode data	
21		
22	Override ratio	
23		
24	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
25	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
26	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
27	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
28	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
29	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
30	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
31	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
32	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
33	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
34	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
35	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
36	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
37	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
38	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
39	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
40	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
41	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
42	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
43	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
44	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
45	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
46	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
47	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
48	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
49	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-9 Status data area list

Device No.	Signal name	Content
D9250	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
51	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
52	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
53	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
54	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
55	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
56	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
57	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
58	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
59	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
60	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
61	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
62	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
63	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
64	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
65	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
66	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
67	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
68	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
69	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
70	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
71	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
72	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
73	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
74	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
75	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
76	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
77	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
78	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
79	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
80	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
81	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
82	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
83	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
84	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
85	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
86	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
87	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
88	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
89	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
90	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
91	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
92	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
93	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
94	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
95	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
96	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
97	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
98	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
99	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-10 Status data area list

Device No.	Signal name	Content
D9300	Current position (machine position) [Set by the parameter]	Machine position data; to be updated at 0.8-ms intervals.
01		
02	Current position (absolute position) [Set by the parameter]	Absolute position data; to be updated at 0.8-ms intervals.
03		
04	Current position (incremental position) [Set by the parameter]	Incremental position data; to be updated at 0.8-ms intervals.
05		
06	Target position (reached position) [Set by the parameter]	Reached position data; to be updated at 0.8-ms intervals.
07		
08	Current position (ABS-ENC)	ABS encoder data; to be updated at 0.8-ms intervals.
09		
10	Feedback position [Set by the parameter]	Feedback absolute position data; to be updated at 0.8-ms intervals.
11		
12	Deviation [pulse]	Per-pulse deviation; to be updated at 0.8-ms intervals.
13		
14	Deviation [set unit]	Per-set-unit deviation; to be updated at 0.8-ms intervals.
15		
16	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
17	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
18	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
19	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
20	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
21	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
22	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
23	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
24	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
25	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
26	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
27	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
28	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
29	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
30	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
31	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
32	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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34	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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36	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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44	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
45	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
46	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
47	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
48	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
49	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-11 Status data area list

Device No.	Signal name	Content
D9350	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
51	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
52	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
53	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
54	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
55	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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58	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
59	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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61	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
62	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
63	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
64	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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66	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
67	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
68	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
69	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
70	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
71	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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73	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
74	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
75	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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91	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
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94	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
95	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
96	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
97	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
98	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
99	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

5-3 Status data area/bit list

Table 5-12 Input signal status data area/bit list

Device No.	bit	Signal name	Content
D9000 *1	0	RST 1: Assert	Reset [External input signal/assert: Input short-circuit]
	1	EMG 1: Assert	Emergency Stop [External input signal/assert: Input open]
	2	SON 1: Assert	Servo On [External input signal/assert: Parameter setting]
	3	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	4	GSEL 1: Assert	Gain Select [External input signal/assert: Input short-circuit]
	5	CLR 1: Assert	Deviation Clear [External input signal/assert: Input short-circuit]
	6	FOT 1: Assert	Forward Over Travel [External input signal/assert: Input open]
	7	ROT 1: Assert	Reverse Over Travel [External input signal/assert: Input open]
	8	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	A	SSD 1: Assert	Command Direction Select [External input signal/assert: Input short-circuit]
	B	MD1 1: Assert	Mode Select 1 [External input signal/assert: Input short-circuit]
	C	MD2 1: Assert	Mode Select 2 [External input signal/assert: Input short-circuit]
	D	TL 1: Assert	Torque Limit [External input signal/assert: Input short-circuit]
	E	CIH 1: Assert	Command Pulse Input Prohibition [External input signal/assert: Parameter setting]
	F	BRON 1: Assert	Compulsory Brake ON [External input signal/assert: Input short-circuit]
D9001 *1	0	PC 1: Assert	Proportional Control [External input signal/assert: Input short-circuit]
	1	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	2	GSEL2 1: Assert	Gain Select 2 [External input signal/assert: Input short-circuit]
	3	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	8	PS1 1: Assert	Address Assignment 1 [External input signal/assert: Input short-circuit]
	9	PS2 1: Assert	Address Assignment 2 [External input signal/assert: Input short-circuit]
	A	PS3 1: Assert	Address Assignment 3 [External input signal/assert: Input short-circuit]
	B	PS4 1: Assert	Address Assignment 4 [External input signal/assert: Input short-circuit]
	C	PS5 1: Assert	Address Assignment 5 [External input signal/assert: Input short-circuit]
	D	PS6 1: Assert	Address Assignment 6 [External input signal/assert: Input short-circuit]
	E	PS7 1: Assert	Address Assignment 7 [External input signal/assert: Input short-circuit]
	F	PS8 1: Assert	Address Assignment 8 [External input signal/assert: Input short-circuit]

*1 This data area reflects the logical addition (OR) status of the signal input via the basic external input, remote input, CC-Link, and Device Net.

Table 5-13 Input signal status data area/bit list

Device No.	bit	Signal name		Content
D9002 *2	0	PST	1: Assert	Automatic Start [External input signal/assert: Input short-circuit]
	1	FJOG	1: Assert	Forward Direction Jog [External input signal/assert: Input short-circuit]
	2	RJOG	1: Assert	Reverse Direction Jog [External input signal/assert: Input short-circuit]
	3	JOSP	1: Assert	Jog Speed Select [External input signal/assert: Input short-circuit]
	4	MFIN	1: Assert	M Complete [External input signal/assert: Input short-circuit]
	5	BSTP	1: Assert	Block Stop [External input signal/assert: Input short-circuit]
	6	PCAN	1: Assert	Automatic Run Stop [External input signal/assert: Input short-circuit]
	7	EPIH	1: Assert	External Automatic Start Prohibit [External input signal/assert: Input short-circuit]
	8	OR1	1: Assert	Speed Override 1 [External input signal/assert: Input short-circuit]
	9	OR2	1: Assert	Speed Override 2 [External input signal/assert: Input short-circuit]
	A	OR3	1: Assert	Speed Override 3 [External input signal/assert: Input short-circuit]
	B	OR4	1: Assert	Speed Override 4 [External input signal/assert: Input short-circuit]
	C	HLD	1: Assert	Hold [External input signal/assert: Input short-circuit]
	D	TRG	1: Assert	External Trigger [External input signal/assert: Input short-circuit]
	E	ZLS	1: Assert	Zero Point Deceleration [External input signal/assert: Input short-circuit]
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
D9003 *2	0	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	1	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	2	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	3	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)

*2 This data area reflects the logical addition (OR) status of the signal input of the basic external input, remote input, CC-Link, and Device Net.

Table 5-14 Output signal status data area/bit list

Device No.	bit	Signal name		Content
D9006	0	ALM	1: Assert	Alarm [External output signal/assert: Parameter setting]
	1	WNG	1: Assert	Warning [External output signal/assert: Parameter setting]
	2	RDY	1: Assert	Servo Ready [External output signal/assert: Output connection]
	3	SZ	1: Assert	Speed Zero [External output signal/assert: Output connection]
	4	PN	1: Assert	Positioning Complete [External output signal/assert: Output connection]
	5	PRF	1: Assert	Rough Match [External output signal/assert: Output connection]
	6	BRK	1: Assert	Brake Release [External output signal/assert: Output connection]
	7	LIM	1: Assert	Torque Limit In-Process [External output signal/assert: Output connection]
	8	PEND	1: Assert	Program End [External output signal/assert: Output connection]
	9	PRDY	1: Assert	Automatic Run Ready [External output signal/assert: Output connection]
	A	MMOD	1: Assert	Manual Run Mode In-Process [External output signal/assert: Output connection]
	B	HMOD	1: Assert	Zero Return Run Mode In-Process [External output signal/assert: Output connection]
	C	AMOD	1: Assert	Automatic Run Mode In-Process [External output signal/assert: Output connection]
	D	PMOD	1: Assert	Pulse Train Run Mode In-Process [External output signal/assert: Output connection]
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
D9007	0	OUT1	1: Assert	Common Output 1 [External output signal/assert: Output connection]
	1	OUT2	1: Assert	Common Output 2 [External output signal/assert: Output connection]
	2	OUT3	1: Assert	Common Output 3 [External output signal/assert: Output connection]
	3	OUT4	1: Assert	Common Output 4 [External output signal/assert: Output connection]
	4	OUT5	1: Assert	Common Output 5 [External output signal/assert: Output connection]
	5	OUT6	1: Assert	Common Output 6 [External output signal/assert: Output connection]
	6	OUT7	1: Assert	Common Output 7 [External output signal/assert: Output connection]
	7	OUT8	1: Assert	Common Output 8 [External output signal/assert: Output connection]
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	SLSA	1: Assert	Soft Limit Switch A [External output signal/assert: Output connection]
	F	SLSB	1: Assert	Soft Limit Switch B [External output signal/assert: Output connection]

Table 5-15 Output signal status data area/bit list

Device No.	bit	Signal name	Content
D9008	0	M01 1: Assert	M Output 01 [External output signal/assert: Output connection]
	1	M02 1: Assert	M Output 02 [External output signal/assert: Output connection]
	2	M04 1: Assert	M Output 04 [External output signal/assert: Output connection]
	3	M08 1: Assert	M Output 08 [External output signal/assert: Output connection]
	4	M10 1: Assert	M Output 10 [External output signal/assert: Output connection]
	5	M20 1: Assert	M Output 20 [External output signal/assert: Output connection]
	6	M40 1: Assert	M Output 40 [External output signal/assert: Output connection]
	7	M80 1: Assert	M Output 80 [External output signal/assert: Output connection]
	8	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
D9009	0	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	1	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	2	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	3	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

Table 5-16 Basic external input signal status data area/bit list

Device No.	bit	Signal name	Content
D9200 *3	0	DI1 1: Assert	Reset (default) [External input signal/assert: Input short-circuit]
	1	DI2 1: Assert	Servo On (default) [External input signal/assert: Input short-circuit]
	2	DI3 1: Assert	Automatic Start (default) [External input signal/assert: Input short-circuit]
	3	DI4 1: Assert	Forward Direction Jog (default) [External input signal/assert: Input short-circuit]
	4	DI5 1: Assert	Reverse Direction Jog (default) [External input signal/assert: Input short-circuit]
	5	DI6 1: Assert	Zero Point Deceleration (default) [External input signal/assert: Input short-circuit]
	6	DI7 1: Assert	Mode Select 1 (default) [External input signal/assert: Input short-circuit]
	7	DI8 1: Assert	Mode Select 2 (default) [External input signal/assert: Input short-circuit]
	8	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
D9201	0	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	1	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	2	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	3	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)

*3 This data area reflects only the basic external input signal status.

Table 5-17 Extended external input signal status data area/bit list

Device No.	bit	Signal name		Content
D9202 *4	0	RST	1: Assert	Reset [External input signal/assert: Input short-circuit]
	1	EMG	1: Assert	Emergency Stop [External input signal/assert: Input open]
	2	SON	1: Assert	Servo On [External input signal/assert: Parameter setting]
	3	PST	1: Assert	Automatic Start [External input signal/assert: Parameter setting]
	4	HLD	1: Assert	Hold [External input signal/assert: Parameter setting]
	5	CLR	1: Assert	Deviation Clear [External input signal/assert: Parameter setting]
	6	FOT	1: Assert	Forward Over Travel [External input signal/assert: Input open]
	7	ROT	1: Assert	Reverse Over Travel [External input signal/assert: Input open]
	8	EI9	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	9	EI10	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	A	EI11	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	B	EI12	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	C	EI13	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	D	EI14	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	E	EI15	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	F	EI16	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
D9203 *4	0	EI17	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	1	EI18	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	2	EI19	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	3	EI20	1: Assert	———(Default: Not selected) [External input signal/assert: Input short-circuit]
	4	CIH	1: Assert	Command Pulse Input Prohibition [External input signal/assert: Parameter setting]
	5	ZLS	1: Assert	Zero Point Deceleration [External input signal/assert: Input short-circuit]
	6	TRG	1: Assert	External Trigger [External input signal/assert: Input short-circuit]
	7	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	8	MD1	1: Assert	Mode Select 1 [External input signal/assert: Input short-circuit]
	9	MD2	1: Assert	Mode Select 2 [External input signal/assert: Input short-circuit]
	A	PC	1: Assert	Proportional Control [External input signal/assert: Input short-circuit]
	B	FJOG	1: Assert	Forward Direction Jog [External input signal/assert: Input short-circuit]
	C	RJOG	1: Assert	Reverse Direction Jog [External input signal/assert: Input short-circuit]
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)

*4 This data area reflects only the extended external input signal status.

Table 5-18 Basic external output signal status data area/bit list

Device No.	bit	Signal name		Content
D9210	0	DO1	1: Assert	Servo Ready (default) [External output signal/assert: Output connection]
	1	DO2	1: Assert	Alarm (default) [External output signal/assert: Parameter setting]
	2	DO3	1: Assert	Warning (default) [External output signal/assert: Output connection]
	3	DO4	1: Assert	Positioning Complete (default) [External output signal/assert: Output connection]
	4	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
D9211	0	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	1	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	2	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	3	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)

Status data

Table 5-19 Extended external output signal status data area/bit list

Device No.	bit	Signal name		Content
D9212	0	EO1	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	1	EO2	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	2	EO3	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	3	EO4	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	4	EO5	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	5	EO6	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	6	EO7	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	7	EO8	1: Assert	———(Default: Not selected) [External output signal/assert: Output connection]
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
D9213	0	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	1	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	2	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	3	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	4	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	5	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	6	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	7	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	8	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	9	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	A	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	B	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	C	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	D	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	E	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)
	F	Controller-dedicated data		(* Data for exclusive use by Nikki Denso)

5-4 Alarm/warning code list

Table 5-20 Alarm/warning code list

Code No.	Type	Item	Code No.	Type	Item
1	Alarm	IPM error	41	Alarm	Regenerative resistor overload error
2			42	Alarm	Zero return incomplete automatic startup warning
3	Alarm	Excessive voltage error	43	Alarm	Address setting error
4			44	Alarm	Positioning timeover
5	Alarm	Encoder error	45	Alarm	Successive control command invalid
6	Alarm	Over speed error	46	Alarm	Absolute encoder backup error
7	Alarm	Overload error	47	Alarm	Positioning data over flow
8	Warning	Overload precaution	48	Alarm	No 1-rotation data setting
9	Alarm	AC-off detection error	49	Alarm	Servo control error
10	Alarm	At-power-ON motor shaft error	50	Alarm	No program end command setup
11			51	Alarm	Sub-routine call nesting over
12					
13	Alarm	Deviation over flow	52	Alarm	Sub-routine return invalid
14	Alarm	Deviation error	53	Alarm	Jump address invalid
15	Warning	Deviation abnormal warning	54	Alarm	Spin command invalid
16			55	Alarm	Division invalid
17	Alarm	Forward over travel	56	Alarm	Positioning amount error
18	Alarm	Reverse over travel	57		
19	Alarm	Forward direction software over travel	58	Alarm	Invalid command
20	Alarm	Reverse direction software over travel	59	Alarm	Indirect data number invalid
21			60	Alarm	Data sustain error 1
22			61	Alarm	Data sustain error 2
23			62	Alarm	Data sustain error 3
24			63	Alarm	Data sustain error 4
25	Alarm	Absolute encoder battery error	64	Alarm	Data sustain error 5
26	Warning	Absolute encoder battery error warning	65	Alarm	Data sustain error 6
27	Alarm	Serial encoder count error	66	Alarm	Data sustain error 7
28	Alarm	Absolute encoder over flow error	67	Alarm	Data sustain error 8
29	Alarm	Absolute encoder count error	68	Alarm	Data sustain error 9
30	Alarm	Serial encoder/IPU communication error	69	Alarm	Data sustain error 10
			70	Alarm	Data sustain error 11
31			71	Alarm	Data sustain error 12
32	Alarm	Motor type not set	72	Alarm	Data sustain error 13
33	Alarm	Motor type incompatible	73	Alarm	Data sustain error 14
34	Alarm	EEPROM writing error	74	Alarm	Data sustain error 15
35	Alarm	Rated speed command invalid 1	75	Alarm	Data sustain error 16
36	Alarm	Rated speed command invalid 2	76	Alarm	Data sustain error 17
37	Alarm	Main power supply shortage error	77	Alarm	Data sustain error 18
38			78	Alarm	Data sustain error 19
39			79	Alarm	Data sustain error 20
40	Alarm	IPM overload error	80	Alarm	Data sustain error 21

Table 5-21 Alarm/warning code list

Code No.	Type	Item
81	Alarm	Data sustain error 22
82	Alarm	Data sustain error 23
83	Alarm	Data sustain error 24
84	Alarm	Data sustain error 25
85	Alarm	Data sustain error 26
86	Alarm	Data sustain error 27
87	Alarm	Data sustain error 28
88	Alarm	Data sustain error 29
89	Alarm	Data sustain error 30
90	Alarm	Data sustain error 31
91	Alarm	Data sustain error 32
92	Alarm	Data sustain error 33
93	Alarm	Data sustain error 34
94	Alarm	Data sustain error 35
95	Alarm	Data sustain error 36
96	Alarm	Data sustain error 37
97		
98	Alarm	Data sustain error 39
99		
100		
101		
102	Alarm	Data sustain error 43
103	Alarm	Data sustain error 44
104		
105		
106		
107		
108	Alarm	Rated speed command invalid 3
109	Alarm	Input power supply error
110		
111	Alarm	Remote sequence control receive timeout
112	Warning	Remote sequence control communication stand-by warning
113	Alarm	Remote sequence control IC defect
114	Alarm	Servo control communication disconnection error
115	Alarm	Servo control communication disconnection error
116		
117	Alarm	Servo control communication error
118	Warning	Main power supply low voltage detection warning
119	Alarm	Linear sensor resolution error
120		

Code No.	Type	Item
121		
122		
123		
124	Warning	Remote sequence control SW change warning
125		
126		
127		
128		
129		
130	Alarm	IPU error
131	Alarm	Serial number matching error
132	Alarm	Serial number not set
133		
134		
135	Alarm	Tau DISC motor 1-rotation position detection speed error
136	Alarm	Tau DISC absolute encoder light-receiving element error
137	Alarm	Tau DISC absolute encoder light-emitting element error
138		
139	Alarm	Magnetic pole detection error

Chapter 6 Remote control data

6-1 Setting data in the remote control data area

You can control the servo controller remotely by "reading" and "writing" remote control data using the "X devices" and "D devices".

- In the X device, each data item is 1 bit long and takes the value of "0" or "1" as data.
- The signal is on when the data value is "1" and off when the data value is "0", regardless of whether the logic is positive or negative.
- External input signals and X device input signals are controlled using the logical addition (OR).
- Unlike the device numbers of other devices, those of the X device are in hexadecimal.

6-2 Remote control data area list

Table 6-1 Input/output signal data area list

Device No.	Symbol	Signal name	Remarks
X0000	RST	Reset	
01	EMG	Emergency Stop	
02	SON	Servo On	
03	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
04	GSEL	Gain select	
05	CLR	Deviation Clear	
06	FOT	Forward Over Travel	
07	ROT	Reverse Over Travel	
08	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
09	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
0A	SSD	Command Direction Select	
0B	MD1	Mode Select 1	
0C	MD2	Mode Select 2	
0D	TL	Torque Limit	
0E	CIH	Command Pulse Input Prohibition	
0F	BRON	Compulsory Brake ON	
X0010	PC	Proportional Control	
11	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
12	GSEL2	Gain Select 2	
13 to 17	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
18	PS1	Address Assignment 1	
19	PS2	Address Assignment 2	
1A	PS3	Address Assignment 3	
1B	PS4	Address Assignment 4	
1C	PS5	Address Assignment 5	
1D	PS6	Address Assignment 6	
1E	PS7	Address Assignment 7	
1F	PS8	Address Assignment 8	

Table 6-2 Input/output signal data area list

Device No.	Symbol	Signal name	Remarks
X0020	PST	Automatic Start	
21	FJOG	Forward Direction Jog	
22	RJOG	Reverse Direction Jog	
23	JOSP	Jog Speed Select	
24	MFIN	M Complete	
25	BSTP	Block Stop	
26	PCAN	Program Cancel	
27	EPIH	External Automatic Start Prohibit	
28	OR1	Speed Override 1	
29	OR2	Speed Override 2	
2A	OR3	Speed Override 3	
2B	OR4	Speed Override 4	
2C	HLD	Hold	
2D	TRG	External Trigger 1	
2E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
2F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
X0030 to 5F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
X0060	ALM	Alarm	
61	WNG	Warning	
62	RDY	Servo Ready	
63	SZ	Speed Zero	
64	PN	Positioning Complete	
65	PRF	Rough Match	
66	BRK	Brake Release	
67	LIM	Torque Limit In-Process	
68	PEND	Program End	
69	PRDY	Automatic Run Ready	
6A	MMOD	Manual Run Mode In-Process	
6B	HMOD	Zero Return Run Mode In-Process	
6C	AMOD	Automatic Run Mode In-Process	
6D	PMOD	Pulse Train Run Mode In-Process	
X006E	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
6F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	

Table 6-3 Input/output signal data area list

Device No.	Symbol	Signal name	Remarks
X0070	OUT1	Common Output 1	
71	OUT2	Common Output 2	
72	OUT3	Common Output 3	
73	OUT4	Common Output 4	
74	OUT5	Common Output 5	
75	OUT6	Common Output 6	
76	OUT7	Common Output 7	
77	OUT8	Common Output 8	
78 to 7D	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
7E	SLSA	Soft Limit Switch A	
7F	SLSB	Soft Limit Switch B	
X0080	M01	M Output 01	
81	M02	M Output 02	
82	M04	M Output 04	
83	M08	M Output 08	
84	M10	M Output 10	
85	M20	M Output 20	
86	M40	M Output 40	
87	M80	M Output 80	
88	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	
89	MSTB	M Strobe	
X008A to 8F	Controller-dedicated data	(* Data for exclusive use by Nikki Denso)	

Table 6-4 Serial encoder data control area list

Device No.	Signal name	Content
D9500	Serial encoder error reset and multi-rotation data clear request	When 85 (55H) is written, the serial encoder error is reset and the multi-rotation data is cleared. This brings the servo controller to an emergency stop. To confirm that the request is completed, check D9550.
D9550	Serial encoder error reset and multi-rotation data clear request complete	The serial encoder error reset and multi-rotation data clear request of D9500 is completed, the value is set to 85 (55H). When "0" is written to D9500, the value is set to "0".