

B-4 ModBus Data Listing

B-4-1 ModBus Coil List

The following tables list the primary coils for the inverter interface to the network. The table legend is given below.

- **Coil Number** – The network register address offset for the coil. The coil data is a single bit (binary) value.
- **Name** – The functional name of the coil
- **R/W** – The read-only (R) or read-write (R/W) access permitted to the inverter data
- **Description** – The meaning of each of the states of the coils

Coil No.	Item	R/W	Setting
0000h	unused	–	(Inaccessible)
0001h	Operation command	R/W	1: Run, 0: Stop (valid when A002 = 03)
0002h	Rotation direction command	R/W	1: Reverse rotation, 0: Forward rotation (valid when A002 = 03)
0003h	External trip (EXT)	R/W	1: Trip
0004h	Trip reset (RS)	R/W	1: Reset
0005h	(Reserved)	–	–
0006h	(Reserved)	–	–
0007h	Intelligent input terminal [1]	R/W	1: ON, 0: OFF (*1)
0008h	Intelligent input terminal [2]	R/W	1: ON, 0: OFF (*1)
0009h	Intelligent input terminal [3]	R/W	1: ON, 0: OFF (*1)
000Ah	Intelligent input terminal [4]	R/W	1: ON, 0: OFF (*1)
000Bh	Intelligent input terminal [5]	R/W	1: ON, 0: OFF (*1)
000Ch	Intelligent input terminal [6]	R/W	1: ON, 0: OFF (*1)
000Dh	Intelligent input terminal [7]	R/W	1: ON, 0: OFF (*1)
000Eh	(Reserved)	–	–
000Fh	Operation status	R	1: Run, 0: Stop (interlocked to “d003”)
0010h	Rotation direction	R	1: Reverse rotation, 0: Forward rotation (interlocked to “d003”)
0011h	Inverter ready	R	1: Ready, 0: Not ready
0012h	(Reserved)	–	–
0013h	RUN (running)	R	1: Running, 0: Not Running
0014h	FA1 (constant-speed reached)	R	1: ON, 0: OFF
0015h	FA2 (set frequency overreached)	R	1: ON, 0: OFF
0016h	OL (overload advance notice (1))	R	1: ON, 0: OFF
0017h	OD (output deviation for PID control)	R	1: ON, 0: OFF
0018h	AL (alarm signal)	R	1: ON, 0: OFF
0019h	FA3 (set frequency reached)	R	1: ON, 0: OFF
001Ah	OTQ (over-torque)	R	1: ON, 0: OFF
001Bh	(Reserved)	–	–
001Ch	UV (undervoltage)	R	1: ON, 0: OFF
001Dh	TRQ (torque limited)	R	1: ON, 0: OFF
001Eh	RNT (operation time over)	R	1: ON, 0: OFF
001Fh	ONT (plug-in time over)	R	1: ON, 0: OFF
0020h	THM (thermal alarm signal)	R	1: ON, 0: OFF
0021h	(Reserved)	–	–
0022h	(Reserved)	–	–
0023h	(Reserved)	–	–
0024h	(Reserved)	–	–
0025h	(Reserved)	–	–
0026h	BRK (brake release)	R	1: ON, 0: OFF
0027h	BER (brake error)	R	1: ON, 0: OFF
0028h	ZS (0 Hz detection signal)	R	1: ON, 0: OFF
0029h	DSE (speed deviation maximum)	R	1: ON, 0: OFF
002Ah	POK (positioning completed)	R	1: ON, 0: OFF
002Bh	FA4 (set frequency overreached 2)	R	1: ON, 0: OFF
002Ch	FA5 (set frequency reached 2)	R	1: ON, 0: OFF

Coil No.	Item	R/W	Setting
002Dh	OL2 (overload notice advance (2))	R	1: ON, 0: OFF
002Eh	OdC: Analog O disconnection detection	–	1: ON, 0: OFF
002Fh	OIdC: Analog OI disconnection detection	–	1: ON, 0: OFF
0030h	(Reserved)	–	–
0031h	(Reserved)	–	–
0032h	FBV (PID feedback comparison)	R	1: ON, 0: OFF
0033h	NDc (communication train disconnection)	R	1: ON, 0: OFF
0034h	LOG1 (logical operation result 1)	R	1: ON, 0: OFF
0035h	LOG2 (logical operation result 2)	R	1: ON, 0: OFF
0036h	LOG3 (logical operation result 3)	R	1: ON, 0: OFF
0037h	(Reserved)	–	–
0038h	(Reserved)	–	–
0039h	(Reserved)	–	–
003Ah	WAC (capacitor life warning)	R	1: ON, 0: OFF
003Bh	WAF (cooling-fan speed drop)	R	1: ON, 0: OFF
003Ch	FR (starting contact signal)	R	1: ON, 0: OFF
003Dh	OHF (heat sink overheat warning)	R	1: ON, 0: OFF
003Eh	LOC (low-current indication signal)	R	1: ON, 0: OFF
003Fh	M01 (general output 1)	R	1: ON, 0: OFF
0040h	M02 (general output 2)	R	1: ON, 0: OFF
0041h	M03 (general output 3)	R	1: ON, 0: OFF
0042h	(Reserved)	–	–
0043h	(Reserved)	–	–
0044h	(Reserved)	–	–
0045h	IRDY (inverter ready)	R	1: ON, 0: OFF
0046h	FWR (forward rotation)	R	1: ON, 0: OFF
0047h	RVR (reverse rotation)	R	1: ON, 0: OFF
0048h	MJA (major failure)	R	1: ON, 0: OFF
0049h	Data writing in progress	R	1: Writing in progress, 0: Normal status
004Ah	CRC error	R	1: Error detected, 0: No error (*2)
004Bh	Overrun	R	1: Error detected, 0: No error (*2)
004Ch	Framing error	R	1: Error detected, 0: No error (*2)
004Dh	Parity error	R	1: Error detected, 0: No error (*2)
004Eh	Sum check error	R	1: Error detected, 0: No error (*2)
004Fh	(Reserved)	–	–
0050h	WCO (window comparator O)	R	1: ON, 0: OFF
0051h	WCOI (window comparator OI)	R	1: ON, 0: OFF
0052h	(Reserved)	–	–
0053h	OPDc (option disconnection)	R	1: ON, 0: OFF
0054h	FREF (FQ command source)	R	1: Operator, 0: Others
0055h	REF (RUN command source)	R	1: Operator, 0: Others
0056h	SETM (2nd motor selected)	R	1: 2nd motor selected, 0: 1st motor selected
0057h	(Reserved)	–	–
0058h	EDM (Gate suppress monitor)	R	1: ON, 0: OFF
0059h-	unused	R	inaccessible

Note 1 Normally, this coil is turned on when the corresponding intelligent input terminal on the control circuit terminal block is turned on or the coil itself is set to on. In this regard, the operation of the intelligent input terminal has priority over the operation of the coil. If disconnection of the communication train has disabled the master system from turning off the coil, turn the corresponding intelligent input terminal on the control circuit block on and off. This operation turns off the coil.

Note 2 Communication error data is retained until an error reset command is input. (The data can be reset during the inverter operation.)

B-4-2 ModBus Holding Registers

The following tables list the holding registers for the inverter interface to the network. The table legend is given below.

- **Function Code** – The inverter's reference code for the parameter or function (same as inverter keypad display)
- **Name** – The standard functional name of the parameter or function for the inverter
- **R/W** – The read-only(R) or read-write access(R/W) permitted to the data in the inverter
- **Description** – How the parameter or setting works (same as Chapter 3 description).
- **Reg.** – The network register address offset for the value. Some values have a high-byte and low-byte address.
- **Range** – The numerical range for the network value that is sent and/or received



Tip

The network values are binary integers. Since these values cannot have an embedded decimal point, for many parameters it represents the actual value (in engineering units) multiplied by a factor of 10 or 100. Network communications must use the listed range for network data. The inverter automatically divides received values by the appropriate factor in order to establish the decimal point for internal use. Likewise, the network host computer must apply the same factor when it needs to work in engineering units. However, when sending data to the inverter, the network host computer must scale values to the integer range listed for network communications.

- **Resolution** – This is the quantity represented by the LSB of the network value, in engineering units. When the network data range is greater than the inverter's internal data range, this 1-bit resolution will be fractional.

Register No.	Function name	Function code	R/W	Monitoring and setting items		Data resolution
0000h	unused	—	—	Inaccessible		
0001h	Output frequency setting/monitor	F001 (high)	R/W	0 to 40000 (valid when A001 = 03)		0.01 [Hz]
0002h		F001 (low)	R/W			
0003h	Inverter status A	—	R	0: Initial status 2: Stopping 3: Running 4: Free-run stop 5: Jogging	6: DC braking 7: Retrying 8: Tripping 9: Undervoltage (UV),	—
0004h	Inverter status B	—	R	0: Stopping, 1: Running, 2: Tripping		—
0005h	Inverter status C	—	R	0: — 1: Stopping 2: Decelerating 3: Constant-speed operation 4: Accelerating 5: Forward rotation	6: Reverse rotation 7: Switching from fwd. to rev. rotation, 8: Switching from rev. to fwd. rotation, 9: Starting fwd. 10: Starting rev.	—
0006h	PID feedback	—	R/W	0 to 10000		0.01 [%]
0007h to 0010h	(Reserved)	—	R	—	—	

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
0011h	Fault frequency monitor	d080	R	0 to 65535	1 [time]
0012h	Fault monitor 1 (factor)	d081	R	See the list of inverter trip factors below	–
0013h	Fault monitor 1 (inverter status)			See the list of inverter trip factors below	–
0014h	Fault monitor 1 (frequency) (high)			0 to 40000	0.01[Hz]
0015h	Fault monitor 1 (frequency) (low)				
0016h	Fault monitor 1 (current)			Output current at tripping	0.01[A]
0017h	Fault monitor 1 (voltage)			DC input voltage at tripping	1[V]
0018h	Fault monitor 1 (running time) (high)			Cumulative running time at tripping	1[h]
0019h	Fault monitor 1 (running time) (low)				
001Ah	Fault monitor 1 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
001Bh	Fault monitor 1 (power-on time) (low)				
001Ch	Fault monitor 2 (factor)	d082	R	See the list of inverter trip factors below	–
001Dh	Fault monitor 2 (inverter status)			See the list of inverter trip factors below	–
001Eh	Fault monitor 2 (frequency) (high)			0 to 40000	0.01[Hz]
001Fh	Fault monitor 2 (frequency) (low)				
0020h	Fault monitor 2 (current)			Output current at tripping	0.01[A]
0021h	Fault monitor 2 (voltage)			DC input voltage at tripping	1[V]
0022h	Fault monitor 2 (running time) (high)			Cumulative running time at tripping	1[h]
0023h	Fault monitor 2 (running time) (low)				
0024h	Fault monitor 2 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0025h	Fault monitor 2 (power-on time) (low)				
0026h	Fault monitor 3 (factor)	d083	R	See the list of inverter trip factors below	–
0027h	Fault monitor 3 (inverter status)			See the list of inverter trip factors below	–
0028h	Fault monitor 3 (frequency) (high)			0 to 40000	0.01[Hz]
0029h	Fault monitor 3 (frequency) (low)				
002Ah	Fault monitor 3 (current)			Output current at tripping	0.01[A]
002Bh	Fault monitor 3 (voltage)			DC input voltage at tripping	1[V]
002Ch	Fault monitor 3 (running time) (high)			Cumulative running time at tripping	1[h]
002Dh	Fault monitor 3 (running time) (low)				
002Eh	Fault monitor 3 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
002Fh	Fault monitor 3 (power-on time) (low)				
0030h	Fault monitor 4 (factor)	d084	R	See the list of inverter trip factors below	–
0031h	Fault monitor 4 (inverter status)			See the list of inverter trip factors below	–
0032h	Fault monitor 4 (frequency) (high)			0 to 40000	0.01[Hz]
0033h	Fault monitor 4 (frequency) (low)				
0034h	Fault monitor 4 (current)			Output current at tripping	0.01[A]
0035h	Fault monitor 4 (voltage)			DC input voltage at tripping	1[V]
0036h	Fault monitor 4 (running time) (high)			Cumulative running time at tripping	1[h]
0037h	Fault monitor 4 (running time) (low)				
0038h	Fault monitor 4 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0039h	Fault monitor 4 (power-on time) (low)				
003Ah	Fault monitor 5 (factor)	d085	R	See the list of inverter trip factors below	–
003Bh	Fault monitor 5 (inverter status)			See the list of inverter trip factors below	–
003Ch	Fault monitor 5 (frequency) (high)			0 to 40000	0.01[Hz]
003Dh	Fault monitor 5 (frequency) (low)				
003Eh	Fault monitor 5 (current)			Output current at tripping	0.01[A]
003Fh	Fault monitor 5 (voltage)			DC input voltage at tripping	1[V]
0040h	Fault monitor 5 (running time) (high)			Cumulative running time at tripping	1[h]
0041h	Fault monitor 5 (running time) (low)				
0042h	Fault monitor 5 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
0043h	Fault monitor 5 (power-on time) (low)				

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
0044h	Fault monitor 6 (factor)	d086	R	See the list of inverter trip factors below	–
0045h	Fault monitor 6 (inverter status)			See the list of inverter trip factors below	–
0046h	Fault monitor 6 (frequency) (high)			0 to 40000	0.01[Hz]
0047h	Fault monitor 6 (frequency) (low)				
0048h	Fault monitor 6 (current)			Output current at tripping	0.01[A]
0049h	Fault monitor 6 (voltage)			DC input voltage at tripping	1[V]
004Ah	Fault monitor 6 (running time) (high)			Cumulative running time at tripping	1[h]
004Bh	Fault monitor 6 (running time) (low)				
004Ch	Fault monitor 6 (power-on time) (high)			Cumulative power-on time at tripping	1[h]
004Eh	Warning monitor	d090	R	Warning code: 0 to 385	–
004Fh to 006Ch	(reserved)	–	–	–	–
006Dh to 08Efh	(reserved)	–	–	–	–
0900h	Writing to EEPROM	–	W	0: Motor constant recalculation 1: Save all data in EEPROM Other: Motor constant recalculation and save all data in EEPROM	–
0901h	Unused	–	–	Inaccessible	–
0902h	EEPROM write mode	–	W	0 (invalid) / 1 (valid)	
0903h to 1000h	Unused	–	–	Inaccessible	–

Note 1 Assume that the rated current of the inverter is “1000”.

Note 2 If a number not less than “1000” (100.0 seconds) is specified, the second value after the decimal point will be ignored.

Note 3 0902h setting is referred for one time when following 06h command is executed

List of inverter trip factors

Upper part of trip factor code (indicating the factor)		Lower part of trip factor code (indicating the inverter status)	
Name	Code	Name	Code
No trip factor	0	Resetting	0
Over-current event while at constant speed	1	Stopping	1
Over-current event during deceleration	2	Decelerating	2
Over-current event during acceleration	3	Constant-speed operation	3
Over-current event during other conditions	4	Accelerating	4
Overload protection	5	Operating at zero frequency	5
Braking resistor overload protection	6	Starting	6
Overvoltage protection	7	DC braking	7
EEPROM error	8	Overload restricted	8
Undervoltage protection	9		
Current detection error	10		
CPU error	11		
External trip	12		
USP error	13		
Ground-fault protection	14		
Input overvoltage protection	15		
Inverter thermal trip	21		
CPU error	22		
Main circuit error	25		
Driver error	30		
Thermistor error	35		
Braking error	36		
Safe Stop	37		
Low-speed overload protection	38		
Operator connection	40		
Modbus communication error	41		
Easy sequence error (invalid instruction)	43		
Easy sequence error (invalid nesting count)	44		
Easy sequence execution error 1	45		
Easy sequence user trip 0 to 9	50 to 59		
Option error 0 to 9	60 to 69		
Encoder disconnection	80		
Excessive speed	81		
Position control range trip	83		

(iii) List of registers (monitoring)

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1001h	Output frequency monitor	d001 (high)	R	0 to 40000	0.01 [Hz]
1002h		d001 (low)			
1003h	Output current monitor	d002	R	0 to 999900	0.01 [A]
1004h	Rotation direction monitor	d003	R	0: Stopping, 1: Forward rotation, 2: Reverse rotation	0.1 [Hz]
1005h	PID feedback value monitor	d004 (high)	R	0 to 1000000	0.1
1006h		d004 (low)			
1007h	Multi-function input monitor	d005	R	2^0: Terminal 1 to 2^6: Terminal 7	1 bit
1008h	Multi-function output monitor	d006	R	2^0: Terminal 11 to 2^1: Terminal 12/ 2^2: Relay Terminal	1 bit
1009h	Output frequency monitor (after conversion)	d007 (high)	R	0 to 4000000	0.01
100Ah		d007 (low)			
100Bh	Real frequency monitor	d008 (high)	R	-40000 to +40000	0.01 [Hz]
100Ch		d008 (low)	R		
100Dh	Torque reference monitor	d009	R	-200 to +200	1 [%]
100Eh	Torque bias monitor	d010	R	-200 to +200	1 [%]
100Fh	(Reserved)	—	—	—	—
1010h	Output torque monitor	d012	R	-200 to +200	1 [%]
1011h	Output voltage monitor	d013	R	0 to 6000	0.1 [V]
1012h	Input power monitor	d014	R	0 to 1000	0.1 [kW]
1013h	Watt-hour monitor	d015 (high)	R	0 to 9999000	0.1
1014h		d015 (low)			
1015h	Total RUN time	d016 (high)	R	0 to 999900	1 [h]
1016h		d016 (low)			
1017h	Power ON time monitor	d017 (high)	R	0 to 999900	1 [h]
1018h		d017 (low)			
1019h	Fin temperature monitor	d018	R	-200 to 1500	0.1 [°C]
101Ah to 101Ch	(Reserved)	—	—	—	—
101Dh	Life assessment monitor	d022	R	2^0: Capacitor on main circuit board 2^1: cooling-fan	1 bit
101Eh	Program counter	d023	R	0~1024	
101Fh	Program number	d024	R	0~9999	
1020h~1025h	(Reserved)	—	—	—	—
1026h	DC voltage monitor	d102	R	0 to 10000	0.1 [V]
1027h	Regenerative braking load rate monitor	d103	R	0 to 1000	0.1 [%]
1028h	Electronic thermal monitor	d104	R	0 to 1000	0.1 [%]
1029h to 102Dh	(Reserved)	—	—	—	—
102Eh	Drive programming monitor (UM0)	d025(HIGH)	R	-2147483647 to 2147483647	1
102Fh		d025(LOW)	R		
1030h	Drive programming monitor (UM1)	d026(HIGH)	R	-2147483647 to 2147483647	1
1031h		d026(LOW)	R		
1032h	Drive programming monitor (UM2)	d027(HIGH)	R	-2147483647 to 2147483647	1
1033h		d027(LOW)	R		
1034h to 1035h	(Reserved)	—	—	—	—
1036h	Position command monitor	d029(HIGH)	R	-268435455 to 268435455	1
1037h		d029(LOW)	R		
1038h	Current position monitor	d030(HIGH)	R	-268435455 to 268435455	1
1039h		d030(LOW)	R		
103Ah to 1056h	(reserved)	—	—	—	—
1057h	Inverter mode	d060	R	0 (IM CT) 1 (IM VT) 2 (Reserved)	
1058h	unused	—	—	Inaccessible	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1059h	Frequency source monitor	d062	R	0: Operator 1 to 15: Multi-speed freq. 1 to 15 16: Jog frequency 18: Modbus network 19: Option 21: Potentiometer 22: Pulse train 23: Calculated function output 24: EzSQ (Drive Programming) 25: [O] input 26: [OI] input 27: [O] + [OI]	—
105Ah	Run source monitor	d063	R	1: Terminal 2: Operator 3: Modbus network 4: Option	—
10A1h	Analog input O monitor	d130	R	0 to 1023	—
10A2h	Analog input OI monitor	d131	R	0 to 1023	—
10A4h	Pulse train input monitor	d133	R	0.00 to 100.00	%
10A6h	PID deviation monitor	d153	R	-327.68 to 327.67 -9999.00 to 9999.00	%
10A8h	PID output monitor	d155	R	0.00 to 9999.00 if (A071: 01) -9999.00 to 9999.00 if (A071: 02)	%

(iv) List of registers

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1103h	Acceleration time 1	F002 (high)	R/W	0 to 360000	0.01 [sec.]
1104h		F002 (low)			
1105h	Deceleration time 1	F003 (high)	R/W	0 to 360000	0.01 [sec.]
1106h		F003 (low)			
1107h	Operator rotation direction selection	F004	R/W	00 (forward rotation), 01 (reverse rotation)	–
1108h to 1200h	Unused	–	–	Inaccessible	–

(v) List of registers (function modes)

Parameter group A

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1201h	Frequency reference selection	A001	R/W	00 (digital operator), 01 (terminal), 02 (operator), 03 (Modbus communication), 04 (option), 06 (pulse train frequency), 7 (drive programming), 10 (operation function result)	–
1202h	Run command selection (*)	A002	R/W	01 (terminal), 02 (operator), 03 (Modbus communication), 04 (option)	–
1203h	Base frequency	A003	R/W	300 to “maximum frequency”	0.1 [Hz]
1204h	Maximum frequency	A004	R/W	300 to 4000	0.1 [Hz]
1205h	O/OI selection	A005	R/W	00 (switches between O/OI via terminal AT), 02 (switches between O/FREQ adjuster via terminal AT), 03 (switches between OI/FREQ adjuster via terminal AT)	–
1206h to 120Ah	(Reserved)	–	–	–	–
120Bh	O start frequency	A011 (high)	R/W	0 to 40000	0.01 [Hz]
120Ch		A011 (low)			
120Dh	O end frequency	A012 (high)	R/W	0 to 40000	0.01 [Hz]
120Eh		A012 (low)			
120Fh	O start ratio	A013	R/W	0 to “O end ratio”	1 [%]
1210h	O end ratio	A014	R/W	“O start ratio” to 100	1 [%]
1211h	O start selection	A015	R/W	00 (start FQ), 01 (0 Hz)	–
1212h	O, O2, OI sampling	A016	R/W	1 to 30 or 31 (500 ms filter ± 0.1 Hz with hysteresis)	1
1213h	Drive Programming (EzSQ) selection	A017	R/W	00 (disable), 01 (PRG start), 02 (always ON)	–
1214h	(Reserved)	–	–	–	–
1215h	Multi-step speed selection	A019	R/W	00 (binary), 01 (bit)	–
1216h	Multi-step speed reference 0	A020 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
1217h		A020 (low)	R/W		
1218h	Multi-step speed reference 1	A021 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
1219h		A021 (low)	R/W		
121Ah	Multi-step speed reference 2	A022 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
121Bh		A022 (low)	R/W		
121Ch	Multi-step speed reference 3	A023 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
121Dh		A023 (low)	R/W		
121Eh	Multi-step speed reference 4	A024 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
121Fh		A024 (low)	R/W		
1220h	Multi-step speed reference 5	A025 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
1221h		A025 (low)	R/W		
1222h	Multi-step speed reference 6	A026 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]
1223h		A026 (low)	R/W		
1224h	Multi-step speed reference 7	A027 (high)	R/W	0 or “start frequency” to “maximum frequency”	0.01 [Hz]

After changing the setting, keep the time 40 ms or longer before actually give run command

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1226h	Multi-step speed reference 8	A028 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
1227h		A028 (low)	R/W		
1228h	Multi-step speed reference 9	A029 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
1229h		A029 (low)	R/W		
122Ah	Multi-step speed reference 10	A030 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
122Bh		A030 (low)	R/W		
122Ch	Multi-step speed reference 11	A031 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
122Dh		A031 (low)	R/W		
122Eh	Multi-step speed reference 12	A032 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
122Fh		A032 (low)	R/W		
1230h	Multi-step speed reference 13	A033 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
1231h		A033 (low)	R/W		
1232h	Multi-step speed reference 14	A034 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
1233h		A034 (low)	R/W		
1234h	Multi-step speed reference 15	A035 (high)	R/W	0 or "start frequency" to "maximum frequency"	0.01 [Hz]
1235h		A035 (low)	R/W		
1236h	(Reserved)	—	—	—	—
1237h	(Reserved)	—	—	—	—
1238h	Jogging frequency	A038	R/W	0.0, "Start frequency" to 999	0.01 [Hz]
1239h	Jogging stop selection	A039	R/W	00 (free running on jogging stop/Disabled in operation) 01 (deceleration stop on jogging stop/Disabled in operation) 02 (DC injection braking on jogging stop/Disabled in operation) 03 (free running on jogging stop/Enabled in operation) 04 (deceleration stop on jogging stop/Enabled in operation) 05 (DC injection braking on jogging stop/Enabled in operation)	
123Ah	(Reserved)	—	—	—	—
123Bh	Torque boost selection	A041	R/W	00 (manual torque boost), 01 (automatic torque boost)	—
123Ch	Manual torque boost voltage	A042	R/W	0 to 200	0.1 [%]
123Dh	Manual torque boost frequency	A043	R/W	0 to 500	0.1 [%]
123Eh	V/F characteristics selection	A044	R/W	00 (VC), 01 (VP), 02 (free V/f), 03 (sensorless vector control),	—
123Fh	Output voltage gain	A045	R/W	20 to 100	1 [%]
1240h	Automatic torque boost voltage compensation gain	A046	R/W	0 to 255	1 [%]
1241h	Automatic torque boost slip compensation gain	A047	R/W	0 to 255	1 [%]
1242h to 1244h	(Reserved)	—	—	—	—
1245h	DC injection braking enable	A051	R/W	00 (disabling), 01 (enabling), 02 (output freq [A052 set value])	—
1246h	DC injection braking frequency	A052	R/W	0 to 6000	0.01 [Hz]
1247h	DC injection braking delay time	A053	R/W	0 to 50	0.1 [sec.]
1248h	DC injection braking power	A054	R/W	0 to 100	1 [%]
1249h	DC injection braking time	A055	R/W	0 to 600	0.1 [sec.]
124Ah	DC injection braking method selection	A056	R/W	00 (edge operation), 01 (level operation)	—
124Bh	Startup DC injection braking power	A057	R/W	0 to 100	1 [%]
124Ch	Startup DC injection braking time	A058	R/W	0 to 600	0.1 [sec.]
124Dh	DC injection braking carrier frequency	A059	R/W	20 to 150	0.1 [kHz]
124Eh	(Reserved)	—	—	—	—
124Fh	Frequency upper limit	A061 (high)	R/W	0 or "maximum frequency limit" to "maximum frequency"	0.01 [Hz]
1250h		A061 (low)	R/W		

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1251h	Frequency lower limit	A062 (high)	R/W	0 or "maximum frequency limit" to "maximum frequency"	0.01 [Hz]
1252h		A062 (low)	R/W		
1253h	Jump frequency 1	A063 (high)	R/W	0 to 40000	0.01 [Hz]
1254h		A063 (low)	R/W		
1255h	Jump frequency width 1	A064	R/W	0 to 1000	0.01 [Hz]
1256h	Jump frequency 2	A065 (high)	R/W	0 to 40000	0.01 [Hz]
1257h		A065 (low)	R/W		
1258h	Jump frequency width 2	A066	R/W	0 to 1000	0.01 [Hz]
1259h	Jump frequency 3	A067 (high)	R/W	0 to 40000	0.01 [Hz]
125Ah		A067 (low)	R/W		
125Bh	Jump frequency width 3	A068	R/W	0 to 1000	0.01 [Hz]
125Ch	Acceleration stop frequency	A069 (high)	R/W	0 to 40000	0.01 [Hz]
125Dh		A069 (low)	R/W		
125Eh	Acceleration stop time	A070	R/W	0 to 600	0.1 [sec.]
125Fh	PID selection	A071	R/W	00 (disabling), 01 (enabling), 02 (reverse output enabling)	–
1260h	PID P gain	A072	R/W	0 to 2500	0.10
1261h	PID I gain	A073	R/W	0 to 36000	0.1 [sec.]
1262h	PID D gain	A074	R/W	0 to 10000	0.01 [sec.]
1263h	PID scale	A075	R/W	1 to 9999	0.01
1264h	PID feedback selection	A076	R/W	00 (OI), 01 (O), 02 (RS485 communication), 03 (pulse train frequency), 10 (operation function output)	–
1265h	Reverse PID function	A077	R/W	00 (disabling), 01 (enabling)	–
1266h	PID output limit function	A078	R/W	0 to 1000	0.1 [%]
1267h	PID feedforward selection	A079	R/W	00 (disabled), 01 (O), 02 (OI)	–
1268h	(Reserved)	–	R/W	–	–
1269h	AVR selection	A081	R/W	00 (always on), 01 (always off), 02 (off during deceleration)	–
126Ah	AVR voltage selection	A082	R/W	200 V class: 0 (200)/1 (215)/2 (220)/3 (230)/4 (240) 400 V class: 5 (380)/6 (400)/7 (415)/8 (440)/9 (460)/10 (480)	–
126Bh	AVR filter time constant	A083	R/W	0.000 to 10.00	0.001[sec]
126Ch	AVR deceleration gain	A084	R/W	50 to 200	1[%]
126Dh	Energy-saving operation mode	A085	R/W	00 (normal operation), 01 (energy-saving operation)	–
126Eh	Energy-saving response/accuracy adjustment	A086	R/W	0 to 1000	0.1 [%]
126Fh to 1273h	(Reserved)	–	–	–	–
1274h	Acceleration time 2	A092 (high)	R/W	0 to 360000	0.01 [sec.]
1275h		A092 (low)	R/W		
1276h	Deceleration time 2	A093 (high)	R/W	0 to 360000	0.01 [sec.]
1277h		A093 (low)	R/W		
1278h	Select method to switch to Acc2/Dec2 profile	A094	R/W	00 (switching by 2CH terminal), 01 (switching by setting), 02 (Forward and reverse)	–
1279h	Acc1 to Acc2 frequency transition point	A095 (high)	R/W	0 to 40000	0.01 [Hz]
127Ah		A095 (low)	R/W		
127Bh	Dec1 to Dec2 frequency transition point	A096 (high)	R/W	0 to 40000	0.01 [Hz]
127Ch		A096 (low)	R/W		
127Dh	Acceleration curve selection	A097	R/W	00 (linear), 01 (S curve), 02 (U curve), 03 (inv.U curve), 04 (EL-S curve)	–
127Eh	Deceleration curve setting	A098	R/W	00 (linear), 01 (S curve), 02 (U curve), 03 (inv.U curve), 04 (EL-S curve)	–
127Fh	(Reserved)	–	–	–	–
1280h	(Reserved)	–	–	–	0.01 [Hz]
1281h	OI input active range start frequency	A101 (high)	R/W	0 to 40000	0.01 [Hz]
1282h		A101 (low)	R/W		

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1283h	OI input active range end frequency	A102 (high)	R/W	0 to 40000	1 [%]
1284h		A102 (low)	R/W		
1285h	OI input active range start ratio	A103	R/W	0 to "OI input active range end ratio"	1 [%]
1286h	OI input active range end ratio	A104	R/W	"OI input active range start ratio" to 100	—
1287h	OI input start frequency enable	A105	R/W	00 (start FQ), 01 (0 Hz)	—
1288h to 12A4h	(Reserved)	—	—	—	—
12A5h	Acceleration curve parameter	A131	R/W	01 (small curve) to 10 (large curve)	—
12A6h	Deceleration curve parameter	A132	R/W	01 (small curve) to 10 (large curve)	—
12A7h to 12AEh	(Reserved)	—	—	—	—
12AFh	Operation frequency input A setting	A141	R/W	00 (digital operator), 01 (freq adjuster), 02 (input O), 03 (input OI), 04 (RS485 communication), 05 (option 1), 06 (Option 2), 07 (pulse train frequency)	—
12B0h	Operation frequency input B setting	A142	R/W	00 (digital operator), 01 (freq adjuster), 02 (input O), 03 (input OI), 04 (RS485 communication), 05 (option 1), 06 (Option 2), 07 (pulse train frequency)	—
12B1h	Operator selection	A143	R/W	00 (addition (A + B)), 01 (subtraction: (A - B)), 02 (multiplication: (A x B))	—
12B2h	(Reserved)	—	—	—	—
12B3h	Frequency addition amount	A145 (high)	R/W	0 to 40000	0.01 [Hz]
12B4h		A145 (low)	R/W		
12B5h	Frequency addition direction	A146	R/W	00 (frequency command + A145), 01 (frequency command - A145)	—
12B6h to 12B8h	(Reserved)	—	—	—	—
12B9h	EL-S-curve ratio 1 during acceleration	A150	R/W	0 to 50	1 [%]
12BAh	EL-S-curve ratio 2 during acceleration	A151	R/W	0 to 50	1 [%]
12BBh	EL-S-curve ratio 1 during deceleration	A152	R/W	0 to 50	1 [%]
12BCh	EL-S-curve ratio 2 during deceleration	A153	R/W	0 to 50	1 [%]
12BDh	Deceleration hold frequency	A154 (high)	R/W	0~40000	0.01 [Hz]
12BEh		A154 (low)	R/W		
12BFh	Deceleration hold time	A155	R/W	0~600	0.1 [sec.]
12C0h	PID sleep function action threshold	A156 (high)	R/W	0~40000	0.01 [Hz]
12C1h		A156 (low)	R/W		
12C2h	PID sleep function action delay time	A157	R/W	0~255	0.1 [sec.]
12C3h to 12C5h	(Reserved)	—	—	—	—
12C6h	[VR] input active range start frequency	A161 (high)	R/W	0~40000	0.01 [Hz]
12C7h		A161 (low)			
12C8h	[VR] input active range end frequency	A162 (high)	R/W	0~40000	0.01 [Hz]
12C9h		A162 (low)			
12CAh	[VR] input active range start current	A163	R/W	0~100	1 [%]
12CBh	[VR] input active range end voltage	A164	R/W	0~100	1 [%]
12CCh	[VR] input start frequency enable	A165	R/W	00 (start FQ) / 01 (0 Hz)	—
12CDh to 1300h	unused	—	—	Inaccessible	—

Parameter group B

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1301h	Retry selection	b001	R/W	00 (trip), 01 (0 Hz start), 02 (frequency matching start), 03 (trip after frequency matching deceleration stop), 04 (active frequency matching restart)	–
1302h	Allowable momentary power interruption time	b002	R/W	3 to 250	0.1 [sec.]
1303h	Retry wait time	b003	R/W	3 to 1000	0.1 [sec.]
1304h	Momentary power interruption/undervoltage trip during stop selection	b004	R/W	00 (disabling), 01 (enabling), 02 (disabling during stopping and decelerating to stop)	–
1305h	Momentary power interruption retry time selection	b005	R/W	00 (16 times), 01 (no limit)	–
1306h	(Reserved)	–	–	–	–
1307h	Frequency matching lower limit frequency setting	b007 (high)	R/W	0 to 40000	0.01 [Hz]
1308h		b007 (low)	R/W		
1309h	Trip retry selection	b008	R/W	00 (trip), 01 (0 Hz start), 02 (frequency matching start), 03 (trip after frequency matching deceleration stop), 04 (active frequency matching restart)	–
130Ah	(Reserved)	–	–	–	–
130Bh	Overvoltage/overcurrent retry time selection	b010	R/W	1 to 3	1 [time]
130Ch	Trip retry wait time	b011	R/W	3 to 1000	0.1 [sec.]
130Dh	Electronic thermal level	b012	R/W	0.20 x Rated current to 1.00 x Rated current	0.1 [%]
130Eh	Electronic thermal characteristics selection	b013	R/W	00 (reduced torque characteristic), 01 (constant torque characteristic), 02 (free setting)	–
130Fh	(Reserved)	–	–	Inaccessible	–
1310h	Free setting, electronic thermal frequency 1	b015	R/W	0 to b017	1 [Hz]
1311h	Free setting, electronic thermal current 1	b016	R/W	0 to Rated current	0.1 [A]
1312h	Free setting, electronic thermal frequency 2	b017	R/W	0 to b019	1 [Hz]
1313h	Free setting, electronic thermal current 2	b018	R/W	0 to Rated current	0.1 [A]
1314h	Free setting, electronic thermal frequency 3	b019	R/W	0 to 400	1 [Hz]
1315h	Free setting, electronic thermal current 3	b020	R/W	0 to Rated current	0.1 [A]
1316h	Overload limit selection	b021	R/W	00 (disabling), 01 (enabling during acceleration and constant-speed operation), 02 (enabling during constant-speed operation), 03 (enabling during acceleration and constant-speed operation [speed increase at regeneration])	–
1317h	Overload limit level	b022	R/W	0.32 x Rated current to 3.20 x Rated current	0.1 [%]
1318h	Overload limit parameter	b023	R/W	1 to 30000	0.1 [sec.]
1319h	Overload limit selection 2	b024	R/W	00 (disabling), 01 (enabling during acceleration and constant-speed operation), 02 (enabling during constant-speed operation), 03 (enabling during acceleration and constant-speed operation [speed increase at regeneration])	–
131Ah	Overload limit level 2	b025	R/W	0.32 x Rated current to 3.20 x Rated current	0.1 [%]
131Bh	Overload limit parameter 2	b026	R/W	1 to 30000	0.1 [sec.]
131Ch	Overcurrent suppression function	b027	R/W	00 (disabling), 01 (enabling), 02 (enable with reduced voltage)	–
131Dh	Active frequency matching restart level	b028	R/W	0.32 x Rated current to 3.20 x Rated current	0.1 [%]
131Eh	Active frequency matching restart parameter	b029	R/W	1 to 30000	0.1 [sec.]

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
131Fh	Starting frequency at active frequency matching restart	b030	R/W	00 (frequency at the last shutoff), 01 (maximum frequency), 02 (set frequency)	—
1320h	Soft lock selection	b031	R/W	00 (disabling change of data other than "b031" when SFT is on), 01 (disabling change of data other than "b031" and frequency settings when SFT is on), 02 (disabling change of data other than "b031"), 03 (disabling change of data other than "b031" and frequency settings), 10 (enabling data changes during operation)	—
1321h	(Reserved)	—	—	—	—
1322h	Motor cable length parameter	b033	R/W	5 to 20	—
1323h	RUN time/Power ON time setting	b034 (high)	R/W	0 to 65535	1 [10h]
1324h		b034 (low)	R/W		
1325h	Rotation direction limit selection	b035	R/W	00 (Forward and Reverse are enabled)/ 01 (Enable for forward only)/ 02 (Enable for reverse only)	—
1326h	Reduced voltage startup selection	b036	R/W	0 (minimum reduced voltage start time) to 255 (maximum reduced voltage start time)	—
1327h	Display selection	b037	R/W	00 (complete display), 01 (function-specific display), 02 (user setting), 03 (data comparison display), 04 (basicdisplay), 05 (monitor display)	—
1328h	Initial screen selection	b038	R/W	000-202	—
1329h	User parameter automatic setting function selection	b039	R/W	00 (disabling), 01 (enabling)	—
132Ah	Torque limit selection	b040	R/W	00 (quadrant-specific setting), 01 (switching by terminal), 02 (analog input), 03 (option 1)	—
132Bh	Torque limit 1 (fwd-power in 4-quadrant mode)	b041	R/W	0 to 200/no	1 [%]
132Ch	Torque limit 2 (rev/regen. in 4-quadrant mode)	b042	R/W	0 to 200/no	1 [%]
132Dh	Torque limit 3 (rev/power in 4-quadrant mode)	b043	R/W	0 to 200/no	1 [%]
132Eh	Torque limit 4 (fwd/regen. in 4-quadrant mode)	b044	R/W	0 to 200/no	1 [%]
132Fh	Torque LADSTOP selection	b045	R/W	00 (disabling), 01 (enabling)	—
1330h	Reverse rotation prevention selection	b046	R/W	00 (disabling), 01 (enabling)	—
1331h to 1332h	(Reserved)	—	—	—	—
1333h	Dual rate selection	b049	R/W	00 (CT mode)/ 01 (VT mode)	—
1334h	Selection of non-stop function at momentary power interruption	b050	R/W	00 (disabling), 01 (enabling), 02 (enabled (deceleration stop)) 03 (RUN)	—
1335h	Starting voltage of non-stop function at momentary power interruption	b051	R/W	0 to 10000	0.1 [V]
1336h	Stop deceleration level of non-stop function at momentary power interruption	b052	R/W	0 to 10000	0.1 [V]
1337h	Deceleration time of non-stop function at momentary power interruption	b053 (high)	R/W	0.01 to 36000	0.01 [sec.]
1338h		b053 (low)	R/W		
1339h	Deceleration starting width of non-stop function at momentary power interruption	b054	R/W	0 to 1000	0.01 [Hz]
133Ah to 133Eh	(Reserved)	—	—	—	—
133Fh	Window comparator O upper limit level	b060	R/W	0. to 100. (lower limit : b061 + b062 *2) (%)	1 [%]
1340h	Window comparator O lower limit level	b061	R/W	0. to 100. (lower limit : b060 - b062*2) (%)	1 [%]
1341h	Window comparator O hysteresis width	b062	R/W	0. to 10. (lower limit : b061 - b062 / 2) (%)	1 [%]

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1342h	Window comparator OI upper limit level	b063	R/W	0. to 100. (lower limit : b064 + b066 *2) (%)	1 [%]
1343h	Window comparator OI lower limit level	b064	R/W	0. to 100. (lower limit : b063 - b066 *2) (%)	1 [%]
1344h	Window comparator OI hysteresis width	b065	R/W	0. to 10. (lower limit : b063 - b064 / 2) (%)	1 [%]
1345h to 1348h	(Reserved)	—	—	—	—
1349h	Analog operation level at O disconnection	b070	R/W	0 to 100 (%) or “no” (ignore)	1 [%]
134Ah	Analog operation level at OI disconnection	b071	R/W	0 to 100 (%) or “no” (ignore)	1 [%]
134Bh to 134Dh	(reserved)	—	—	—	—
134Eh	Ambient temperature	b075	R/W	-10 to 50	1 [°C]
134Fh to 1350	(reserved)	—	—	—	—
1351h	Integrated power clear	b078	R/W	Clearance by setting “01”	—
1352h	Integrated power display gain	b079	R/W	1 to 1000	1
1353h to 1354h	(Reserved)	—	—	—	—
1355h	Starting frequency	b082	R/W	10 to 999	0.01 [Hz]
1356h	Carrier frequency	b083	R/W	20 to 150	0.1 [kHz]
1357h	Initialization selection	b084	R/W	00 (clears the trip monitor), 01 (initializes data), 02 (clears the trip monitor and initializes data), 03 (clears the trip monitor and parameters), 4 (clears the trip monitor, parameters Drive program)	—
1358h	Initialization parameter selection	b085	R/W	00 (JPN), 01 (EUR)	—
1359h	Frequency conversion coefficient	b086	R/W	1 to 9999	0.01
135Ah	STOP key selection	b087	R/W	00 (enabling), 01 (disabling), 02 (disabling only stop)	—
135Bh	Free-run stop selection	b088	R/W	0 (starting with 0 Hz), 1 (starting with matching frequency), 2 (starting with active matching frequency)	—
135Ch	Automatic carrier frequency reduction	b089	R/W	00 (0 Hz start)/ 01 (frequency matching start)/ 02 (active frequency matching restart)	—
135Dh	Usage rate of regenerative braking function	b090	R/W	0 to 1000	0.1 [%]
135Eh	Stop selection	b091	R/W	00 (deceleration until stop), 01 (free-run stop)	—
135Fh	Cooling fan control	b092	R/W	00 (always ON), 01 (ON during RUN), 02 (ON by temp)	—
1360h	Clear elapsed time of cooling fan	b093	R/W	00 (OFF)/ 01 (CLR)	—
1361h	Initialization target data	b094	R/W	00 (ALL)/ 01 (Exp.COM, TERM)/ 02 (Only U***)/ 03 (All exp.U***)	—
1362h	Regenerative braking function operation selection	b095	R/W	00 (disabling), 01 (enabling [disabling while the motor is stopped]), 02 (enabling [enabling also while the motor is stopped])	—
1363h	Regenerative braking function ON level	b096	R/W	330 to 380, 660 to 760	1. [V]
1364h	BRD resistor	b097	R/W	Min. Resistance to 600.0	0.1 [Ω]
1365h to 1366h	(Reserved)	—	—	—	—
1367h	Free V/f frequency 1	b100	R/W	0. to “Free V/f frequency 2”	1 [Hz]
1368h	Free V/f voltage 1	b101	R/W	0. to 8000	0.1 [V]
1369h	Free V/f frequency 2	b102	R/W	0. to “Free V/f frequency 3”	1 [Hz]
136Ah	Free V/f voltage 2	b103	R/W	0. to 8000	0.1 [V]
136Bh	Free V/f frequency 3	b104	R/W	0. to “Free V/f frequency 4”	1 [Hz]
136Ch	Free V/f voltage 3	b105	R/W	0. to 8000	0.1 [V]
136Dh	Free V/f frequency 4	b106	R/W	0. to “Free V/f frequency 5”	1 [Hz]
136Eh	Free V/f voltage 4	b107	R/W	0. to 8000	0.1 [V]
136Fh	Free V/f frequency 5	b108	R/W	0. to “Free V/f frequency 6”	1 [Hz]

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1370h	Free V/f voltage 5	b109	R/W	0. to 8000	0.1 [V]
1371h	Free V/f frequency 6	b110	R/W	0. to "Free V/f frequency 7"	1 [Hz]
1372h	Free V/f voltage 6	b111	R/W	0. to 8000	0.1 [V]
1373h	Free V/f frequency 7	b112	R/W	0. to 400.	1 [Hz]
1374h	Free V/f voltage 7	b113	R/W	0. to 8000	0.1 [V]
1375h to 137Ah	(Reserved)	—	—	—	—
137Bh	Brake control selection	b120	R/W	00 (disabling), 01 (enabling), 02 (enable without DC injection)	—
137Ch	Brake wait time for release	b121	R/W	0 to 500	0.01 [sec.]
137Dh	Brake wait time for acceleration	b122	R/W	0 to 500	0.01 [sec.]
137Eh	Brake wait time for stopping	b123	R/W	0 to 500	0.01 [sec.]
137Fh	Brake wait time for confirmation	b124	R/W	0 to 500	0.01 [sec.]
1380h	Brake release frequency	b125	R/W	0 to 40000	0.01 [Hz]
1381h	Brake release current	b126	R/W	0.0 to 3.20 x Rated current	0.1 [%]
1382h	Braking input frequency	b127	R/W	0 to 40000	0.01 [Hz]
1383h	(Reserved)	—	—	—	—
1384h	(Reserved)	—	—	—	—
1385h	Overvoltage protection function selection during deceleration	b130	R/W	00 (disabling), 01 (enabling), 02 (enabling with acceleration)	—
1386h	Overvoltage protection level during deceleration	b131	R/W	200 V class: 330 to 390 (V) 400 V class: 660 to 780 (V)	1 [V]
1387h	Overvoltage protection parameter	b132	R/W	10 to 3000	0.01 [sec.]
1388h	Overvoltage protection proportional gain setting	b133	R/W	0 to 500	0.01
1389h	Overvoltage protection integral time setting	b134	R/W	0 to 1500	0.1 [sec.]
138Ah to 1393h	(Reserved)	—	—	—	—
1394h	GS input mode	b145	R/W	00 (no trip)/ 01 (trip)	—
1395h to 1399h	(Reserved)	—	—	—	—
139Ah	Display ex.operator connected	b150	R/W	001 to 060	-
139Bh to 13A2h	(Reserved)	—	—	—	—
13A3h	1st parameter of Dual Monitor	b160	R/W	001 to 030	—
13A4h	2nd parameter of Dual Monitor	b161	R/W	001 to 030	—
13A5h	(Reserved)	—	—	—	—
13A6h	Freq. set in monitoring	b163	R/W	00 (disabling), 01 (enabling),	—
13A7h	Auto return initial display	b164	R/W	00 (disabling), 01 (enabling),	—
13A8h	Ex. Operator com. loss action	b165	R/W	00 (trip), 01 (decel-trip), 02 (ignore), 03 (Free RUN), 04 (decel-stop)	—
13A9h	Data Read/Write selection	b166	R/W	00 (Read/Write OK), 01 (Protected)	—
13AAh to 13ADh	(Reserved)	—	—	—	—
13AEh	Inverter mode selection	b171	R/W	00 (no), 01 (Std.IM), 02 (Reserved), 03 (PM)	—
13AFh to 13B6h	(Reserved)	—	—	—	—
13B7h	Initialize trigger	b180	R/W	00 (no action), 01 (initialize)	—
13B8h to 13C5h	(Reserved)	—	—	—	—
13C6h	E. thermal Dec Mode	b910	R/W	00 (Off), 01 (Fixed Linear), 02 (LinDec Time), 03 (DecTimeCnst)	—
13C7h to 13C8h	E. thermal Dec Time	b911	R/W	0.10 to 100000.00	0.01 [sec.]
13C9h to 13CAh	E. thermal Dec TimeCnst	b912	R/W	0.10 to 100000.00	0.01 [sec.]
13CBh	E. thermal AccmGain	b913	R/W	1.0 to 200.0	0.1 [sec.]
13CCh to 1400h	unused	—	—	Inaccessible	—

Parameter group C

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1401h	Multi-function input 1 selection	C001	R/W	00 (FW: Forward RUN), 01 (RV: Reverse RUN), 02 (CF1: Multispeed 1 setting), 03 (CF2: Multispeed 2 setting), 04 (CF3: Multispeed 3 setting), 05 (CF4: Multispeed 4 setting), 06 (JG: Jogging), 07 (DB: external DC braking), 08 (SET: Set 2nd motor data), 09 (2CH: 2-stage acceleration/deceleration), 11 (FRS: free-run stop), 12 (EXT: external trip), 13 (USP: unattended start protection), 14: (CS: commercial power source enable), 15 (SFT: software lock), 16 (AT: analog input voltage/current select), 18 (RS: reset), 20 (STA: starting by 3-wire input), 21 (STP: stopping by 3-wire input), 22 (F/R: forward/reverse switching by 3-wire input), 23 (PID: PID disable), 24 (PIDC: PID reset), 27 (UP: remote control UP function), 28 (DWN: remote control DOWN function), 29 (UDC: remote control data clearing), 31 (OPE: forcible operation), 32 (SF1: multispeed bit 1), 33 (SF2: multispeed bit 2), 34 (SF3: multispeed bit 3), 35 (SF4: multispeed bit 4), 36 (SF5: multispeed bit 5), 37 (SF6: multispeed bit 6), 38 (SF7: multispeed bit 7), 39 (OLR: overload restriction selection), 40 (TL: torque limit enable), 41 (TRQ1: torque limit selection bit 1), 42 (TRQ2: torque limit selection bit 2), 44 (BOK: braking confirmation), 46 (LAC: LAD cancellation), 47 (PCLR: clearance of position deviation), 50 (ADD: trigger for frequency addition [A145]), 51 (F-TM: forcible-terminal operation), 52 (ATR: permission of torque command input), 53 (KHC: cumulative power clearance), 56 (MI1: general-purpose input 1), 57 (MI2: general-purpose input 2), 58 (MI3: general-purpose input 3), 59 (MI4: general-purpose input 4), 60 (MI5: general-purpose input 5), 61 (MI6: general-purpose input 6), 62 (MI7: general-purpose input 7), 65 (AHD: analog command holding), 66 (CP1: multistage position settings selection 1), 67 (CP2: multistage position settings selection 2), 68 (CP3: multistage position settings selection 3), 69 (ORL: Zero-return limit function), 70 (ORG: Zero-return trigger function), 73 (SPD: speed / position switching), 77 (GS1: safety input 1), 78 (GS2: safety input 2), 81 (485: EzCOM), 82 (PRG: executing Drive Programming), 83 (HLD: retain output frequency), 84 (ROK: permission of run command), 85 (EB: Rotation direction detection(for V/f with ENC), 86 (DISP: Display limitation), 90 (UIO: Unprotected inverter operation), 91 (PSET: preset position), 255 (no).	—
1402h	Multi-function input 2 selection	C002	R/W		—
1403h	Multi-function input 3 selection	C003	R/W		—
1404h	Multi-function input 4 selection	C004	R/W		—
1405h	Multi-function input 5 selection	C005	R/W		—
1406h	Multi-function input 6 selection	C006	R/W		—
1407h	Multi-function input 7 selection	C007	R/W		—
1408h to 140Ah	(Reserved)	-	-	Inaccessible	—
140Bh	Multi-function input 1 operation selection	C011	R/W	00 (NO), 01 (NC)	—
140Ch	Multi-function input 2 operation selection	C012	R/W	00 (NO), 01 (NC)	—
140Dh	Multi-function input 3 operation selection	C013	R/W	00 (NO), 01 (NC)	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
140Eh	Multi-function input 4 operation selection	C014	R/W	00 (NO), 01 (NC)	—
140Fh	Multi-function input 5 operation selection	C015	R/W	00 (NO), 01 (NC)	—
1410h	Multi-function input 6 operation selection	C016	R/W	00 (NO), 01 (NC)	—
1411h	Multi-function input 7 operation selection	C017	R/W	00 (NO), 01 (NC)	—
1412h to 1414h	(Reserved)	—	—	Inaccessible	—
1415h	Multi-function output terminal 11 selection	C021	R/W	00 (RUN: running), 01 (FA1: constant-speed reached), 02 (FA2: set frequency overreached), 03 (OL: overload notice advance signal (1)), 04 (OD: output deviation for PID control), 05 (AL: alarm signal), 06 (FA3: set frequency reached), 07 (OTQ: over-torque), 09 (UV: undervoltage), 10 (TRQ: torque limited), 11 (RNT: operation time over),	—
1416h	Multi-function output terminal 12 selection	C022	R/W	12 (ONT: plug-in time over), 13 (THM: thermal alarm signal), 19 (BRK: brake release), 20 (BER: braking error), 21 (ZS: 0 Hz detection signal), 22 (DSE: speed deviation maximum), 23 (POK: positioning completed), 24 (FA4: set frequency overreached 2), 25 (FA5: set frequency reached 2), 26 (OL2: overload notice advance signal (2)), 31 (FBV: PID feedback comparison), 32 (NDC: communication line disconnection), 33 (LOG1: logical operation result 1), 34 (LOG2: logical operation result 2), 35 (LOG3: logical operation result 3), 39 (WAC: capacitor life warning), 40 (WAF: cooling-fan), 41 (FR: starting contact signal), 42 (OHF: heat sink overheat warning), 43 (LOC: low-current indication signal), 44 (M01: general-purpose output 1), 45 (M02: general-purpose output 2), 46 (M03: general-purpose output 3), 50 (IRDY: inverter ready), 51 (FWR: forward rotation), 52 (RVR: reverse rotation), 53 (MJA: major failure), 54 (WCO: window comparator O), 55 (WCOI: window comparator OI), 58(FREF), 59(REF), 60(SETM),	—
1421h to 1423h	(Reserved)	—	—		—
141Ah	Relay output (AL2, AL1) function selection	C026	R/W		—
141Bh	[EO] terminal selection	C027	R/W	00 (output frequency), 01 (output current), 02 (output torque), 03 (digital output frequency), 04 (output voltage), 05 (input power), 06 (electronic thermal overload), 07 (LAD frequency), 08 (digital current monitoring), 10 (heat sink temperature), 12 (general-purpose output YAO),15 (pulse input),16 (option)	—
141Ch	AM selection	C028	R/W	00 (output frequency), 01 (output current), 02 (output torque), 04 (output voltage), 05 (input power), 06 (electronic thermal overload), 07 (LAD frequency), 10 (heat sink temperature), 11 (output torque [signed value]), 13 (general-purpose output YA1),16(option)	—
141Dh	(reserved)	—	—	—	—
141Eh	Digital current monitor reference value	C030	R/W	0.32 x Rated current to 3.20 x Rated current	0.1 [%]
141Fh	Multi-function output terminal 11 contact selection	C031	R/W	00 (NO), 01 (NC)	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1420h	Multi-function output terminal 12 contact selection	C032	R/W	00 (NO), 01 (NC)	—
1421h to 1423h	(Reserved)	—	—	—	—
1424h	Relay output (AL2, AL1) contact selection	C036	R/W	00 (NO contact at AL2, NC contact at AL1), 01 (NC contact at AL2, NO contact at AL1)	—
1425h	(Reserved)	—	—	—	—
1426h	Light load signal output mode	C038	R/W	00 (output during acceleration/deceleration and constant-speed operation), 01 (output only during constant-speed operation)	—
1427h	Light load detection level	C039	R/W	0.0 to 3.20 x Rated current	0.1 [%]
1428h	Overload warning signal output mode	C040	R/W	00 (output during acceleration/deceleration and constant-speed operation), 01 (output only during constant-speed operation)	—
1429h	Overload warning level	C041	R/W	0.1 to 3.20 x Rated current	0.1 [%]
142Ah	Arrival frequency during acceleration	C042 (high)	R/W	0 to 40000	0.01 [Hz]
142Bh		C042 (low)	R/W		
142Ch	Arrival frequency during deceleration	C043 (high)	R/W	0 to 40000	0.01 [Hz]
142Dh		C043 (low)	R/W		
142Eh	PID deviation excessive level	C044	R/W	0 to 1000	0.1 [%]
142Fh	Arrival frequency during acceleration 2	C045 (high)	R/W	0 to 40000	0.01 [Hz]
1430h		C045 (low)	R/W		
1431h	Arrival frequency during deceleration 2	C046 (high)	R/W	0 to 40000	0.01 [Hz]
1432h		C046 (low)	R/W		
1433h	Pulse train input scale conversion for EO output	C047	R/W	0.01 - 99.99	—
1434h to 1437h	(Reserved)	—	—	—	—
1438h	PID FB upper limit	C052	R/W	0 to 1000	0.1 [%]
1439h	PID FB lower limit	C053	R/W	0 to 1000	0.1 [%]
143Ah	Over-torque/under-torque selection	C054	R/W	00 (Over torque)/ 01 (under torque)	—
143Bh	Overtorque level (forward power running)	C055	R/W	0 to 200	1 [%]
143Ch	Overtorque level (reverse regeneration)	C056	R/W	0 to 200	1 [%]
143Dh	Overtorque level (reverse power running)	C057	R/W	0 to 200	1 [%]
143Eh	Overtorque level (forward regeneration)	C058	R/W	0 to 200	1 [%]
143Fh	Signal output mode of Over/under torque	C059	R/W	00 (output during acceleration/deceleration and constant-speed operation), 01 (output only during constant-speed operation)	—
1440h	(Reserved)	—	—	—	—
1441h	Thermal warning level	C061	R/W	0 to 100	1 [%]
1442h	(Reserved)	—	—	—	—
1443h	0 Hz detection level	C063	R/W	0 to 10000	0.01 [Hz]
1444h	Fin overheat warning level	C064	R/W	0 to 110	1 [°C]
1445h to 144Ah	(Reserved)	—	—	—	—
144Bh	Communication speed selection (Baud rate selection)	C071	R/W	03 (2400bps), 04 (4800bps), 05 (9600bps), 06 (19.2kbps), 07 (38.4kbps), 08 (57.6kbps), 09 (76.8kbps), 10 (115.2kbps)	—
144Ch	Communication station No. Selection	C072	R/W	1 to 247	—
144Dh	(Reserved)	—	—	—	—
144Eh	Communication parity selection	C074	R/W	00 (no parity), 01 (even parity), 02 (odd parity)	—
144Fh	Communication stop bit selection	C075	R/W	1 (1 bit), 2 (2 bits)	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1450h	Communication error selection	C076	R/W	00 (trip), 01 (tripping after deceleration stop), 02 (ignore), 03 (free-run stop), 04 (deceleration stop)	—
1451h	Communication error timeout	C077	R/W	0 to 9999	0.01 [sec.]
1452h	Communication wait time	C078	R/W	0 to 1000	1 [msec.]
1453h to 1454h	(Reserved)	—	—	—	—
1455h	O adjustment	C081	R/W	0 to 2000	0.1
1456h	OI adjustment	C082	R/W	0 to 2000	0.1
1457h to 1458h	(Reserved)	—	—	—	—
1459h	Thermistor adjustment	C085	R/W	0 to 2000	0.1
145Ah to 145Eh	(Reserved)	—	—	—	—
145Fh	Debug mode selection	C091	R	"00" Do not change	—
1460h to 1463h	(Reserved)	—	—	—	—
1464h	Communication selection	C096	R/W	00 (Modbus-RTU)/ 01(EzCOM)/ 02 (EzCOM<administrator>)	—
1465h	(Reserved)	—	—	—	—
1466h	EzCOM start adr. of master	C098	R/W	1~8	—
1467h	EzCOM end adr. of master	C099	R/W	1~8	—
1468h	EzCOM starting trigger	C100	R/W	00 (485 input)/ 01 (Always ON)	—
1469h	UP/DWN selection	C101	R/W	00 (not storing the frequency data), 01 (storing the frequency data)	—
146Ah	Reset selection	C102	R/W	00 (trip reset at power-on), 01 (trip reset when the power is OFF), 02 (enabled only during trip), 03 (trip reset only)	—
146Bh	Restart frequency matching selection	C103	R/W	00 (0 Hz start), 01 (frequency matching start), 02 (active frequency matching restart)	—
146Ch	UP/DWN clear mode	C104	R/W	00 (0Hz)/ 01 (Pow-ON data)	—
146Dh	EO gain setting	C105	R/W	50 to 200	1 [%]
146Eh	AM gain setting	C106	R/W	50 to 200	1 [%]
146Fh	(Reserved)	—	—	Inaccessible	1 [%]
1471h	AM bias setting	C109	R/W	0 to 100	1 [%]
1472h	(Reserved)	—	—	—	1 [%]
1473h	Overload warning level 2	C111	R/W	0.0 to 3.20 x Rated current	0.1 [%]
1474h to 1485h	(Reserved)	—	—	—	—
1486h	Output 11 ON delay	C130	R/W	0 to 1000	0.1 [sec.]
1487h	Output 11 OFF delay	C131	R/W	0 to 1000	0.1 [sec.]
1488h	Output 12 ON delay	C132	R/W	0 to 1000	0.1 [sec.]
1489h	Output 12 OFF delay	C133	R/W	0 to 1000	0.1 [sec.]
148Ah to 148Fh	(Reserved)	—	—	—	—
1490h	Relay output ON delay	C140	R/W	0 to 1000	0.1 [sec.]
1491h	Relay output OFF delay	C141	R/W	0 to 1000	0.1 [sec.]
1492h	Logic output signal 1 selection 1	C142	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—
1493h	Logic output signal 1 selection 2	C143	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—
1494h	Logical output signal 1 operator selection	C144	R/W	00 (AND), 01 (OR), 02 (XOR)	—
1495h	Logic output signal 2 selection 1	C145	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—
1496h	Logic output signal 2 selection 2	C146	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—
1497h	Logical output signal 2 operator selection	C147	R/W	00 (AND), 01 (OR), 02 (XOR)	—
1498h	Logic output signal 3 selection 1	C148	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—
1499h	Logic output signal 3 selection 2	C149	R/W	Same as the settings of C021 to C026 (except those of LOG1 to LOG6, OPO, no)	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
149Ah	Logical output signal 3 operator selection	C150	R/W	00 (AND), 01 (OR), 02 (XOR)	–
149Bh to 14A3h	(Reserved)	–	–	–	–
14A4h	Input terminal response time 1	C160	R/W	0 to 200	
14A5h	Input terminal response time 2	C161	R/W	0 to 200	
14A6h	Input terminal response time 3	C162	R/W	0 to 200	
14A7h	Input terminal response time 4	C163	R/W	0 to 200	
14A8h	Input terminal response time 5	C164	R/W	0 to 200	
14A9h	Input terminal response time 6	C165	R/W	0 to 200	
14AAh	Input terminal response time 7	C166	R/W	0 to 200	
14ABh to 14ACh	(Reserved)	–	–	–	
14ADh	Multi-step speed/position determination time	C169	R/W	0 to 200	
14A4h to 1500h	unused	–	–	Inaccessible	–

Parameter group H

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1501h	Auto-tuning selection	H001	R/W	00 (disabled), 01 (stop), 02 (rotation)	—
1502h	Motor parameter selection	H002	R/W	00 (Standard motor parameter), 02 (auto-tuning parameter)	—
1503h	Motor capacity selection	H003	R/W	00 (0.1kW) - 15 (18.5kW)	—
1504h	Motor pole number selection	H004	R/W	2/4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42/44/46/48	—
1505h	(Reserved)	—	—	—	—
1506h	Speed response	H005	R/W	1 to 1000	1[%]
1507h	Stabilization parameter	H006	R/W	0 to 255	1
1508h to 1514h	(Reserved)	—	—	—	—
1516h	Motor parameter R1	H020	R/W	1 to 65530	0.001 [O]
1517h	(Reserved)	—	—	—	—
1518h	Motor parameter R2	H021	R/W	1 to 65530	0.001 [O]
1519h	(Reserved)	—	—	—	—
151Ah	Motor parameter L	H022	R/W	1 to 65530	0.01 [mH]
151Bh	(Reserved)	—	—	—	—
151Ch	Motor parameter Io	H023	R/W	1 to 65530	0.01 [A]
151Dh	Motor parameter J	H024 (high)	R/W	1 to 9999000	0.001
151Eh		H024 (low)	R/W		
151Hf to 1524h	(Reserved)	—	—	—	—
1525h	Motor parameter R1 (auto-tuning data)	H030	R/W	1 to 65530	0.001 [O]
1526h	(Reserved)	—	—	Inaccessible	—
1527h	Motor parameter R2 (auto-tuning data)	H031	R/W	1 to 65530	0.001 [O]
1528h	(Reserved)	—	—	—	—
1529h	Motor parameter L (auto-tuning data)	H032	R/W	1 to 65530	0.01 [mH]
152Ah	(Reserved)	—	—	Inaccessible	—
152Bh	Motor parameter Io (auto-tuning data)	H033	R/W	1 to 65530	0.01 [A]
152Ch	Motor parameter J (auto-tuning data)	H034 (high)	R/W	1 to 9999000	0.001
152Dh		H034 (low)	R/W		
152Eh to 153Ch	(Reserved)	—	—	—	—
153Dh	Slip compensation P gain for V/f control with FB	H050	R/W	0 to 10000	0.1
153Eh	Slip compensation I gain for V/f control with FB	H051	R/W	0 to 10000	1
1571h	PM motor code selection	H102	R/W	00 Standard motor parameter 02 Auto-tuning parameter	—
1572h	PM motor capacity	H103	R/W	0.10 to 18.50	—
1573h	PM motor pole number selection	H104	R/W	2/4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42/44/46/48 poles	—
1574h	PM rated current	H105	R/W	0.00 x Rated current to 1.60 x Rated current	0.01 [A]
1575h	PM parameter R	H106	R/W	0.001 to 65.535 Ω	0.001 [Ω]
1576h	PM parameter Ld	H107		0.01 to 655.35 mH	0.01 [mH]
1577h	PM parameter Lq	H108		0.01 to 655.35 mH	0.01 [mH]
1578h	PM parameter Ke	H109		0.0001 to 6.5535 Vp/(rad/s)	0.0001 [Vp/(rad/s)]

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1579h to 157Ah	PM parameter J	H110		0.001 - 9999.000 kg/m ²	0.001 [kg/m ²]
157Bh	PM parameter R (auto-tuning data)	H111		0.001 to 65.535 Ω	0.001 [Ω]
157Ch	PM parameter Ld (auto-tuning data)	H112		0.01 to 655.35 mH	0.01 [mH]
157Dh	PM parameter Lq (auto-tuning data)	H113		0.01 to 655.35 mH	0.01 [mH]
1581h	PM speed response	H116		1 to 1000	—
1582h	PM starting current	H117		20.00 to 100.00%	—
1583h	PM starting time	H118		0.01 to 60.00 s	0.01 [s]
1584h	PM stabilization constant	H119		0 to 120%	—
1586h	PM minimum frequency	H121		0.0 to 25.5%	—
1587h	PM No-Load current	H122		0.00 to 100.00%	—
1588h	PM starting method	H123		00 Normal 01 IMPE	—
158Ah	PM IMPE 0V wait	H131		0 to 255	—
158Bh	PM IMPE detect wait	H132		0 to 255	—
158Ch	PM IMPE detect	H133		0 to 255	—
158Dh	PM IMPE voltage gain	H134		0 to 200	—
158Eh to 1600h	unused	—	—	Inaccessible	—

Parameter group P

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1601h	Operation selection at option 1 error	P001	R/W	00 (trip), 01 (continues operation)	—
1602h	(Reserved)	—	—	—	—
1603h	EA terminal selection	P003	R/W	00 (FQ set), 01 (Encoder FB), 02 (EzSQ)	—
1604h	Pulse train input mode for feed-back	P004	R/W	00 (Single ph.), 01 (2 ph.1), 02 (2 ph.2), 03 (Single+Dir)	—
1605h to 160Ah	(Reserved)	—	—	—	—
160Bh	Encoder pulses	P011	R/W	32 to 1024	1
160Ch	Simple positioning selection	P012	R/W	00 (OFF), 02 (ON)	—
160Dh to 160Eh	(Reserved)	—	—	—	—
160Fh	Creep speed	P015	R/W	"start frequency" to 1000	0.01 [Hz]
1610h	(Reserved)	—	—	—	—
1611h	Positioning range	P017	R/W	0 to 10000	pulses
1612h to 1619h	(Reserved)	—	—	—	—
161Ah	Over-speed error detection level	P026	R/W	0 to 1500	0.1 [%]
161Bh	Speed deviation error detection level	P027	R/W	0 to 12000	0.01 [Hz]
161Ch to 161Eh	(Reserved)	—	—	—	—
161Fh	Acceleration/deceleration time input type	P031	R/W	00 (digital operator), 03 (drive programming)	—
1620h	(Reserved)	—	—	—	—
1621h	Torque reference input selection	P033	R/W	00 (terminal O), 01 (terminal OI), 03 (digital operator), 06 (Option 1)	—
1622h	Torque reference setting	P034	R/W	0 to 200	1 [%]
1623h	(Reserved)	—	—	—	—
1624h	Torque bias mode	P036	R/W	00 (none), 01 (digital operator), 05 (option 1)	—
1625h	Torque bias value	P037	R/W	-200 to +200	1 [%]
1626h	Torque bias polarity selection	P038	R/W	00 (signed), 01 (depends on the run direction)	—
1627h	Speed limit value in torque control (forward)	P039 (high)	R/W	0 to 12000	0.01 [Hz]
1628h		P039 (low)	R/W		
1629h	Speed limit value in torque control (reverse)	P040 (high)	R/W	0 to 12000	0.01 [Hz]
162Ah		P040 (low)	R/W		
162Bh	Speed / torque control switching time	P041	R/W	0 to 1000	—
162Ch to 162Dh	(Reserved)	—	—	—	—
162Eh	Network comm. Watchdog timer	P044	R/W	0 to 9999	0.01 [sec.]
162Fh	Operation setting at communications error	P045	R/W	00 (trip), 01 (trip after deceleration stop), 02 (ignore), 03 (free RUN), 04 (deceleration stop)	—
1630h	Instance number	P046	R/W	0-20	—
1631h	(Reserved)	—	—	—	—
1632h	Operation setting at idle mode detection	P048	R/W	00 (trip), 01 (trip after deceleration stop), 02 (ignore), 03 (free RUN), 04 (deceleration stop)	—
1633h	Polarity setting for rotation speed	P049	R/W	2/4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42/44/46/48	—
1634h to 1638h	(Reserved)	—	—	—	—
1639h	Pulse train frequency scale	P055	R/W	10 to 320 (input frequency corresponding to the allowable maximum frequency)	0.1 [kHz]
163Ah	Pulse train frequency filter time constant	P056	R/W	1 to 200	0.01 [sec.]

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
163Bh	Pulse train frequency bias amount	P057	R/W	-100 to +100	1 [%]
163Ch	Pulse train frequency limit	P058	R/W	0 to 100	1 [%]
163Dh	Pulse input lower cut	P059	R/W	0.01 to 20.00	0.01 [%]
163Eh	Multi-step position command 0	P060(HIGH)	R/W	-268435455 to 268435455	1
163Fh		P060(LOW)	R/W		
1640h	Multi-step position command 1	P061(HIGH)	R/W	-268435455 to 268435455	1
1641h		P061(LOW)	R/W		
1642h	Multi-step position command 2	P062(HIGH)	R/W	-268435455 to 268435455	1
1643h		P062(LOW)	R/W		
1644h	Multi-step position command 3	P063(HIGH)	R/W	-268435455 to 268435455	1
1645h		P063(LOW)	R/W		
1646h	Multi-step position command 4	P064(HIGH)	R/W	-268435455 to 268435455	1
1647h		P064(LOW)	R/W		
1648h	Multi-step position command 5	P065(HIGH)	R/W	-268435455 to 268435455	1
1649h		P065(LOW)	R/W		
164Ah	Multi-step position command 6	P066(HIGH)	R/W	-268435455 to 268435455	1
164Bh		P066(LOW)	R/W		
164Ch	Multi-step position command 7	P067(HIGH)	R/W	-268435455 to 268435455	1
164Dh		P067(LOW)	R/W		
164Eh	Zero return mode	P068	R/W	00 (Low speed) / 01 (High speed)	
164Fh	Zero return direction selection	P069	R/W	00 (FW) / 01 (RV)	
1650h	Low-speed zero return frequency	P070	R/W	0 to 1000	
1651h	High-speed zero return frequency	P071	R/W	0 to 40000	
1652h	Position range specification (forward)	P072(HIGH)	R/W	0 to 268435455	1
1653h		P072(LOW)	R/W		
1654h	Position range specification (reverse)	P073(HIGH)	R/W	-268435455 to 0	1
1655h		P073(LOW)	R/W		
1656h	(Reserved)	—	—	—	—
1657h	Positioning mode	P075	R/W	00...Limit 01...No limit	—
1658h	(Reserved)	—	—	—	—
1659h	Encoder disconnection timeout	P077	R/W	0 to 100	0.1[sec.]
165Ah to 165Bh	(Reserved)	—	—	—	—
165Ch	Position restarting range	P080	R/W	0 to 10000	pulses
165Dh	Save position at power off	P081	R/W	00...OFF 01...ON	—
165Eh	Currt pos at poff	P082	R/W	-268435455 to 268435455	1
165Fh	(Reserved)	—	—	—	—
1660h	Preset position data	P083	R/W	-268435455 to 268435455	1
1661h to 1665h	(Reserved)	—	—	—	—
1666h	Drive Program parameter U(00)	P100	R/W	0 to 65535	1
1667h	Drive Program parameter U(01)	P101	R/W	0 to 65535	1
1668h	Drive Program parameter U(02)	P102	R/W	0 to 65535	1
1669h	Drive Program parameter U(03)	P103	R/W	0 to 65535	1
166Ah	Drive Program parameter U(04)	P104	R/W	0 to 65535	1
166Bh	Drive Program parameter U(05)	P105	R/W	0 to 65535	1
166Ch	Drive Program parameter U(06)	P106	R/W	0 to 65535	1
166Dh	Drive Program parameter U(07)	P107	R/W	0 to 65535	1
166Eh	Drive Program parameter U(08)	P108	R/W	0 to 65535	1
166Fh	Drive Program parameter U(09)	P109	R/W	0 to 65535	1
1670h	Drive Program parameter U(10)	P110	R/W	0 to 65535	1
1671h	Drive Program parameter U(11)	P111	R/W	0 to 65535	1
1672h	Drive Program parameter U(12)	P112	R/W	0 to 65535	1
1673h	Drive Program parameter U(13)	P113	R/W	0 to 65535	1
1674h	Drive Program parameter U(14)	P114	R/W	0 to 65535	1
1675h	Drive Program parameter U(15)	P115	R/W	0 to 65535	1
1676h	Drive Program parameter U(16)	P116	R/W	0 to 65535	1
1677h	Drive Program parameter U(17)	P117	R/W	0 to 65535	1

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
1678h	Drive Program parameter U(18)	P118	R/W	0 to 65535	1
1679h	Drive Program parameter U(19)	P119	R/W	0 to 65535	1
167Ah	Drive Program parameter U(20)	P120	R/W	0 to 65535	1
167Bh	Drive Program parameter U(21)	P121	R/W	0 to 65535	1
167Ch	Drive Program parameter U(22)	P122	R/W	0 to 65535	1
167Dh	Drive Program parameter U(23)	P123	R/W	0 to 65535	1
167Eh	Drive Program parameter U(24)	P124	R/W	0 to 65535	1
167Fh	Drive Program parameter U(25)	P125	R/W	0 to 65535	1
1680h	Drive Program parameter U(26)	P126	R/W	0 to 65535	1
1681h	Drive Program parameter U(27)	P127	R/W	0 to 65535	1
1682h	Drive Program parameter U(28)	P128	R/W	0 to 65535	1
1683h	Drive Program parameter U(29)	P129	R/W	0 to 65535	1
1684h	Drive Program parameter U(30)	P130	R/W	0 to 65535	1
1685h	Drive Program parameter U(31)	P131	R/W	0 to 65535	1
1686h to 168Dh	(Reserved)	—	—	—	—
168Eh	EzCOM number of data	P140	R/W	1 to 5	—
168Fh	EzCOM destination 1 address	P141	R/W	1 to 247	—
1690h	EzCOM destination 1 register	P142	R/W	0000 to FFFF	—
1691h	EzCOM source 1 register	P143	R/W	0000 to FFFF	—
1692h	EzCOM destination 2 address	P144	R/W	1 to 247	—
1693h	EzCOM destination 2 register	P145	R/W	0000 to FFFF	—
1694h	EzCOM source 2 register	P146	R/W	0000 to FFFF	—
1695h	EzCOM destination 3 address	P147	R/W	1 to 247	—
1696h	EzCOM destination 3 register	P148	R/W	0000 to FFFF	—
1697h	EzCOM source 3 register	P149	R/W	0000 to FFFF	—
1698h	EzCOM destination 4 address	P150	R/W	1 to 247	—
1699h	EzCOM destination 4 register	P151	R/W	0000 to FFFF	—
169Ah	EzCOM source 4 register	P152	R/W	0000 to FFFF	—
169Bh	EzCOM destination 5 address	P153	R/W	1 to 247	—
169Ch	EzCOM destination 5 register	P154	R/W	0000 to FFFF	—
169Dh	EzCOM source 5 register	P155	R/W	0000 to FFFF	—
169Eh~16A1h	(Reserved)	—	—	—	—
16A2h	Option I/F cmd W register 1	P160	R/W	0000 to FFFF	—
16A3h	Option I/F cmd W register 2	P161	R/W	0000 to FFFF	—
16A4h	Option I/F cmd W register 3	P162	R/W	0000 to FFFF	—
16A5h	Option I/F cmd W register 4	P163	R/W	0000 to FFFF	—
16A6h	Option I/F cmd W register 5	P164	R/W	0000 to FFFF	—
16A7h	Option I/F cmd W register 6	P165	R/W	0000 to FFFF	—
16A8h	Option I/F cmd W register 7	P166	R/W	0000 to FFFF	—
16A9h	Option I/F cmd W register 8	P167	R/W	0000 to FFFF	—
16AAh	Option I/F cmd W register 9	P168	R/W	0000 to FFFF	—
16ABh	Option I/F cmd W register 10	P169	R/W	0000 to FFFF	—
16ACh	Option I/F cmd R register 1	P170	R/W	0000 to FFFF	—
16ADh	Option I/F cmd R register 2	P171	R/W	0000 to FFFF	—
16AEh	Option I/F cmd R register 3	P172	R/W	0000 to FFFF	—
16AFh	Option I/F cmd R register 4	P173	R/W	0000 to FFFF	—
16B0h	Option I/F cmd R register 5	P174	R/W	0000 to FFFF	—
16B1h	Option I/F cmd R register 6	P175	R/W	0000 to FFFF	—
16B2h	Option I/F cmd R register 7	P176	R/W	0000 to FFFF	—
16B3h	Option I/F cmd R register 8	P177	R/W	0000 to FFFF	—
16B4h	Option I/F cmd R register 9	P178	R/W	0000 to FFFF	—
16B5h	Option I/F cmd R register 10	P179	R/W	0000 to FFFF	—
16B6h	Profibus node address	P180	R/W	0 to 125	—
16B7h	Profibus clear mode	P181	R/W	00 (clear)/ 01 (last value)	—
16B8h	Profibus map selection	P182	R/W	00 (PPO)/ 01 (Conventional)/ 02 (Flexible mode)	—
16B9h to 16BAh	(Reserved)	—	—	—	—
16BBh	CANopen node address	P185	R/W	0 to 127	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
16BCh	CAN open communication speed	P186	R/W	00 (auto) 05 (250kbps) 01 (10kbps) 06 (500kbps) 02 (20kbps) 07 (800kbps) 03 (50kbps) 08 (1Mbps) 04 (125kbps)	—
16BDh to 16BFh	Unused	—	—	—	—
16C0h	CompoNet node address	P190	R/W	0 to 63	—
16C2h	DeviceNet node address	P192	R/W	0 to 63	—
16C3h to 16C7h	Unused	—	—	—	—
16C8h	Serial comms mode	P200	R/W	00...Standard 01...Free mapping	—
16C9h	Modbus external register 1	P201	R/W	0000 to FFFF	—
16CAh	Modbus external register 2	P202	R/W	0000 to FFFF	—
16CBh	Modbus external register 3	P203	R/W	0000 to FFFF	—
16CCh	Modbus external register 4	P204	R/W	0000 to FFFF	—
16CDh	Modbus external register 5	P205	R/W	0000 to FFFF	—
16CEh	Modbus external register 6	P206	R/W	0000 to FFFF	—
16CFh	Modbus external register 7	P207	R/W	0000 to FFFF	—
16D0h	Modbus external register 8	P208	R/W	0000 to FFFF	—
16D1h	Modbus external register 9	P209	R/W	0000 to FFFF	—
16D2h	Modbus external register 10	P210	R/W	0000 to FFFF	—
16D3h	Modbus register format 1	P211	R/W	00...Unsigned 01...Signed	—
16D4h	Modbus register format 2	P212	R/W	00...Unsigned 01...Signed	—
16D5h	Modbus register format 3	P213	R/W	00...Unsigned 01...Signed	—
16D6h	Modbus register format 4	P214	R/W	00...Unsigned 01...Signed	—
16D7h	Modbus register format 5	P215	R/W	00...Unsigned 01...Signed	—
16D8h	Modbus register format 6	P216	R/W	00...Unsigned 01...Signed	—
16D9h	Modbus register format 7	P217	R/W	00...Unsigned 01...Signed	—
16DAh	Modbus register format 8	P218	R/W	00...Unsigned 01...Signed	—
16DBh	Modbus register format 9	P219	R/W	00...Unsigned 01...Signed	—
16DCh	Modbus register format 10	P220	R/W	00...Unsigned 01...Signed	—
16DDh	Modbus register scaling 1	P221	R/W	0.001 to 65.535	0.001
16DEh	Modbus register scaling 2	P222	R/W	0.001 to 65.535	0.001
16DFh	Modbus register scaling 3	P223	R/W	0.001 to 65.535	0.001
16E0h	Modbus register scaling 4	P224	R/W	0.001 to 65.535	0.001
16E1h	Modbus register scaling 5	P225	R/W	0.001 to 65.535	0.001
16E2h	Modbus register scaling 6	P226	R/W	0.001 to 65.535	0.001
16E3h	Modbus register scaling 7	P227	R/W	0.001 to 65.535	0.001
16E4h	Modbus register scaling 8	P228	R/W	0.001 to 65.535	0.001
16E5h	Modbus register scaling 9	P229	R/W	0.001 to 65.535	0.001
16E6h	Modbus register scaling 10	P230	R/W	0.001 to 65.535	0.001
16E7h	Modbus internal register 1	P301	R/W	0000 to FFFF	—
16E8h	Modbus internal register 2	P302	R/W	0000 to FFFF	—
16E9h	Modbus internal register 3	P303	R/W	0000 to FFFF	—
16EAh	Modbus internal register 4	P304	R/W	0000 to FFFF	—
16EBh	Modbus internal register 5	P305	R/W	0000 to FFFF	—
16ECh	Modbus internal register 6	P306	R/W	0000 to FFFF	—
16EDh	Modbus internal register 7	P307	R/W	0000 to FFFF	—
16EEh	Modbus internal register 8	P308	R/W	0000 to FFFF	—
16EFh	Modbus internal register 9	P309	R/W	0000 to FFFF	—
16F0h	Modbus internal register 10	P310	R/W	0000 to FFFF	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
16F1h	Big/Little endian selection	P400	R/W	00...Big endian 01...Little endian 02...Special endian	—
16F2 to 1E00h	Unused	—	—	—	—
1E01h	Coil data 1	—	R/W	2 ¹ : coil number 0010h - 2 ¹⁵ : coil number 001Fh -	—
1E02h	Coil data 2	—	R/W	2 ¹ : coil number 0020h - 2 ¹⁵ : coil number 002Fh -	—
1E03h	Coil data 3	—	R/W	2 ¹ : coil number 0030h - 2 ¹⁵ : coil number 003Fh -	—
1E04h	Coil data 4	—	R/W	2 ¹ : coil number 0030h - 2 ¹⁵ : coil number 003Fh -	—
1E05h	Coil data 5	—	R/W	2 ¹ : coil number 0040h - 2 ¹⁵ : coil number 004Fh -	—
1E06h to 1F18h	(reserved)	—	-	—	—
1E19h to 1F00h	Unused	—	—	—	—
1F01h	Coil data 0	—	R/W	2 ¹ : coil number 0001h - 2 ¹⁵ : coil number 000Fh -	—
1F02h to 1F1Dh	(reserved)	—	—	(note: 2)	—
1F1Eh to 2102h	Unused	—	—	Inaccessible	—

Note 1 Above register (coil data 0 to 5) is consisted with 16 coil data. EzCOM communication (inverter to inverter) doesn't support coil, but only register is supported, in case of need to access coil, please use above registers.

Note 2 Be sure not to write into above 1F02h to 1F1Dh.

(vi) List of registers (2nd control settings)

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
2103h	2nd acceleration time 1	F202 (high)	R/W	1 to 360000	0.01 [sec.]
2104h		F202 (low)	R/W		
2105h	2nd deceleration time 1	F203 (high)	R/W	1 to 360000	0.01 [sec.]
2106h		F203 (low)	R/W		
2107h to 2200h	unused	—	—	Inaccessible	—

(vii) List of registers (function modes for the 2nd control settings)

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
2201h	Frequency reference selection, 2nd motor	A201	R/W	00 (digital operator), 01 (terminal), 02 (operator), 03 (Modbus communication), 04 (option), 06 (pulse train frequency), 7 (drive programming), 10 (operation function result)	—
2202h	RUN command selection, 2nd motor	A202	R/W	01 (terminal), 02 (operator), 03 (Modbus communication), 04 (option)	—
2203h	2nd set base frequency	A203	R/W	300 to “maximum frequency, 2nd motor”	0.1 [Hz]
2204h	2nd maximum frequency	A204	R/W	300 to 4000	0.1 [Hz]
2205h to 2215h	(Reserved)	—	—	Inaccessible	—
2216h	2nd multi-step speed reference 0	A220 (high)	R/W	0 or “start frequency” to “maximum frequency, 2nd motor”	0.01 [Hz]
2217h		A220 (low)	R/W		
2218h to 223Ah	(Reserved)	—	—	Inaccessible	—
223Bh	2nd torque boost selection	A241	R/W	00 (manual torque boost), 01 (automatic torque boost)	—
223Ch	2nd torque boost voltage	A242	R/W	20 to 200	1 [%]
223Dh	2nd manual torque boost frequency	A243	R/W	0 to 50	1 [%]
223Eh	2nd V/f characteristics selection	A244	R/W	00 (VC), 01 (VP), 02 (free V/f), 03 (sensorless vector control)	—
223Fh	Output voltage gain, 2nd motor	A245	R/W	20 to 100	1 [%]
2240h	2nd automatic torque boost voltage compensation gain	A246	R/W	0 to 255	1
2241h	2nd automatic torque boost slip compensation gain	A247	R/W	0 to 255	1
2242h to 224Eh	(Reserved)	—	—	Inaccessible	—
224Fh	2nd frequency upper limit	A261 (high)	R/W	00 or “2nd minimum frequency limit” to “maximum frequency, 2nd motor”	0.01 [Hz]
2250h		A261 (low)	R/W		
2251h	2nd frequency lower limit	A262 (high)	R/W	00 or “start frequency” to “maximum frequency, 2nd motor limit”	0.01 [Hz]
2252h		A262 (low)	R/W		
2253h to 2268h	(Reserved)	—	—	Inaccessible	—
2269h	AVR selection, 2nd motor	A281	R/W	00 (always on), 01 (always off), 02 (off during deceleration)	—
226Ah	AVR voltage selection, 2nd motor	A282	R/W	200 V class: 0 (200)/1 (215)/2 (220)/3 (230)/4 (240) 400 V class: 5 (380)/6 (400)/7 (415)/8 (440)/9 (460)/10 (480)	—
226Bh to 226Eh	(Reserved)	—	—	Inaccessible	—
226Fh	2nd acceleration time 2	A292 (high)	R/W	1 to 360000	0.01 [sec.]
2270h		A292 (low)	R/W		

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
2271h	2nd deceleration time 2	A293 (high)	R/W	1 to 360000	0.01 [sec.]
2272h		A293 (low)	R/W		
2273h	Select method to switch to Acc2/Dec2 profile, 2nd motor	A294	R/W	00 (switching by 2CH terminal), 01 (switching by setting), 02 (switching only when the rotation is forward/reversed)	—
2274h	Acc1 to Acc2 frequency transition point, 2nd motor	A295 (high)	R/W	0 to 40000	0.01 [Hz]
2275h		A295 (low)	R/W		
2276h	Dec1 to Dec2 frequency transition point, 2nd motor	A296 (high)	R/W	0 to 40000	0.01 [Hz]
2277h		A296 (low)	R/W		
2278h to 230Bh	(Reserved)	—	—	—	—
230Ch	2nd electronic thermal level	b212	R/W	0.20 x Rated current to 1.00 x Rated current	0.1 [%]
230Dh	2nd electronic thermal characteristics selection	b213	R/W	00 (reduced TRQ), 01 (constant torque characteristics), 02 (free setting)	—
230Eh to 2315h	(Reserved)	—	—	—	—
2316h	Overload limit selection, 2nd motor	b221	R/W	00 (disabling), 01 (enabling during acceleration and constant-speed operation), 02 (enabling during constant-speed operation), 03 (enabling during acceleration and constant-speed operation [speed increase at regeneration])	—
2317h	Overload limit level, 2nd motor	b222	R/W	100 to 2000	0.1[%]
2318h	Overload limit parameter, 2nd motor	b223	R/W	1 to 30000	0.1[?]
2319h to 2428h	unused	—	—	Inaccessible	—
2429h	Overload warning level 2, 2nd motor	C241	R/W	0 to 2000	0.1[%]
242Ah to 2501h	Unused	—	—	Inaccessible	—
2502h	2nd motor parameter selection	H202	R/W	00 (standard motor parameter), 02 (auto-tuning parameter)	—
2503h	2nd motor capacity selection	H203	R/W	00 (0.1kW) - 15 (18.5kW)	—
2504h	2nd motor pole number selection	H204	R/W	2/4/6/8/10/12/14/16/18/20/22/24/26/28/30/32/34/36/38/40/42/44/46/48	—
2505h	2nd speed response	H205	R/W	1 to 1000	1[%]
2506h	2nd stabilization parameter	H206	R/W	0 to 255	1
2507h	(Reserved)	—	—	—	—
2508h to 2515h	(Reserved)	—	—	—	—
2516h	2nd motor parameter R1	H220 (high)	R/W	1 to 65535	0.001 [O]
2517h	(Reserved)	—	—	—	—
2518h	2nd motor parameter R2	H221 (high)	R/W	1 to 65535	0.001 [O]
2519h	(Reserved)	—	—	—	—
251Ah	2nd motor parameter L	H222 (high)	R/W	1 to 65535	0.01 [mH]
251Bh	(Reserved)	—	—	—	—
251Ch	2nd motor parameter Io	H223 (high)	R/W	1 to 65535	0.01 [A]
251Dh	2nd motor parameter J	H224 (high)	R/W	1 to 9999000	0.001
251Eh		H224 (low)	R/W		
251Fh to 2524h	(Reserved)	—	—	—	—
2525h	2nd motor parameter R1 (auto-tuning data)	H230 (high)	R/W	1 to 65530	0.001 [O]
2526h	(Reserved)	—	—	—	—

Register No.	Function name	Function code	R/W	Monitoring and setting items	Data resolution
2527h	2nd motor parameter R2 (auto-tuning data)	H231 (high)	R/W	1 to 65530	0.001 [O]
2528h	(Reserved)	—	—	—	—
2529h	2nd motor parameter L (auto-tuning data)	H232 (high)	R/W	1 to 65530	0.01 [mH]
252Ah	(Reserved)	—	—	—	—
252Bh	2nd motor parameter Io (auto-tuning data)	H233 (high)	R/W	1 to 65530	0.01 [A]
252Ch	2nd motor parameter J (auto-tuning data)	H234 (high)	R/W	1 to 9999000	0.001
252Dh		H234 (low)	R/W		
252Eh ~	Unused	—	—	Inaccessible	—

B-5 ModBus mapping

B-5-1 Modbus mapping function

B-5-1-1 Functional outline

An existing register number is allocated in an arbitrary register number.
The list of the communication that can use this function is shown below.

No.	Communication
1	Option board
2	Modbus (RS485)
3	USB

B-5-1-2 Setting parameter

Setting parameters of Modbus mapping function:

P200 (Serial comms mode): Communication mode selection

P201 to P210 (Modbus external register 1 to 10): External register selection

P211 to P220 (Modbus register format 1 to 10): Format of external register

P221 to P230 (Modbus register scaling 1 to 10): Scaling data

P301 to P310 (Modbus internal register 1 to 10): Internal register selection

The number of set registers is limited to 10.

B-5-1-2-1 P200 (Serial comms mode): Communication mode selection

Func. Code	Name	Settings	EU
P200	Serial comms mode	00: Standard 01: Free mapping	00

00: Standard Modbus registers according with Appendix B-4 list.

01: Free mapping where special registers on parameters P201 to P210 could be used.

When the setting is changed, new configuration will be reflected immediately.
(But only if inverter is not in RUN.)

Please don't access the register relevant to Modbus mapping at the time of P200 data change to avoid unexpected operation.

P201 to P230, P301 to P310: When this parameters are modified is necessary to recycle power supply for this changes to become effective.

B-5-1-2-2 P201-P210 (Modbus external register 1 to 10): External register select

Func. Code	Name	Settings	EU
P201 to P210	Modbus external register 1 to 10	0000h to FFFFh	0000h

Defines the addresses to be used by the external controller.

0000h is considered as not used.

B-5-1-2-3 P301-P310 (Modbus internal register 1 to 10): Internal register selection

Func. Code	Name	Settings	EU
P301 to P310	Modbus internal register 1 to 10	0000h to FFFFh	0000h

Defines the internal register address that will be linked to external registers in parameters P201 to P210.

0000h is considered as not used.

Only single word registers could be addressed but some double word registers could be accessed by a single word with limited range. Check next table for details.

Register No.	R/W	Function name	Data range
1E21h	R	(d001) Output frequency monitor	0.00 to 400.00 [Hz]
1E22h	R	(d004) PID feedback value monitor	0.00 to 10000
1E23h	R	(d007) Output frequency monitor	0.00 to 40000.00
1E24h	R	(d008) Real frequency monitor	-327.68 to 327.68 [Hz]
1E25h	R	(d081) Fault monitor 1	-
1F31h	R/W	(F001) Output frequency setting/monitor	0.0 / Start frequency to 655.35 [Hz]
1F32h	R/W	(F002) Acceleration time 1	0.00 to 655.35 [sec]
1F33h	R/W	(F003) Deceleration time 1	0.00 to 655.35 [sec]
1F34h	R/W	(A020) Multi-step speed reference 0	0.00 / Start frequency to 655.35 [Hz]
1F35h	R/W	(A021) Multi-step speed reference 1	0.00 / Start frequency to 655.35 [Hz]
1F36h	R/W	(A022) Multi-step speed reference 2	0.00 / Start frequency to 655.35 [Hz]
1F37h	R/W	(A023) Multi-step speed reference 3	0.00 / Start frequency to 655.35 [Hz]
1F38h	R/W	(A061) Frequency upper limit	0.00 / Frequency lower limit to 655.35 [Hz]
1F39h	R/W	(A062) Frequency lower limit	0.00 / Start frequency to 655.35 [Hz]
1F3Ah	R/W	(A069) Acceleration stop frequency	0.00 to 655.35 [Hz]
1F3Bh	R/W	(A145) Frequency addition amount	0.00 to 655.35 [Hz]
1F3Ch	R/W	(A154) Deceleration hold frequency	0.00 to 655.35 [Hz]
1F3Dh	R/W	(A156) PID sleep function action threshold	0.00 to 655.35 [Hz]
1F3Eh	R/W	(b007) Frequency matching lower limit frequency setting	0.00 to 655.35 [Hz]

B-5-1-2-4 P211-P220 (Modbus register format 1 to 10): Format of external register

Func. Code	Name	Settings	EU
P211 to P220	Modbus register format 1 to 10	00: Unsigned 01: Signed	00

This parameters could be used to adjust the user register data.

When data is written into the inverter, the sign information from P211 to P220 is used to convert data according to MX2.

Example: External register = "signed" (sign-having), Internal register = "unsigned" (sign-less)

After minus data is converted into the absolute value, data writing is carried out after an upper and lower limit check.

In MX2, since the data is sign-less data, it is read as sign-less data.

Example: External register = "signed" (sign-having), Internal register = "signed" (sign-having)

After an upper lower limit check, data writes minus data as it is.

The sign having data is read.

B-5-1-2-5 P221-P230 (Modbus register scaling 1 to 10): Scaling data

Func. Code	Name	Settings	EU
P221 to P230	Modbus register scaling 1 to 10	0.001 to 65.535	1.000

Scale the data when reading or writing an external register to an internal one.

A calculation result is restricted to the following range:

Signed: -32768 to 32767

Unsigned: 0 to 65535

B-5-1-3 Error code

These new error codes has been added:

No.	Code	Explanation
1	31h	Modbus mapping mismatch
2	32h	Access to a duplication register

No.	Internal register	External register	Result
1	0000h (Initial value)	0001h to FFFFh	Error
2	0001h to FFFFh	0000h (Initial value)	Error
3	0001h to FFFFh	0001h to FFFFh	Normal

B-5-1-3-1 Register allocation combination checks

When two or more internal registers in which values differ are in the same external register, both are considered incorrect.

In the same way two or more internal registers couldn't be allocated to one external register.

B-5-1-3-2 Overlapped external register

When an external register and retry a existing register overlap, access to the register is not available.

Moreover, when the overlapping existing register is a double word parameter, access of the register used as a pair is also forbidden.

Example:

External register = 1216 (overlaps with higher rank of existing register: 1216h = A020.)

Internal register = 1201h (existing register: 1201h = A001)

Address 1216h will be associated with two parameters, A020 and A001, As this is not possible only the modbus mapping setting is used and it means that neither lower or higher rank of A020 could be accessed.

B-5-1-3-3 Internal register setup

Is not possible to use a double word or a none existing register as internal register.

B-5-1-4 Examples**B-5-1-4-1 When an external register doesn't overlap with an existing register**

P201 = External register: 4001h

P301 = Internal register: 120Fh (A013)

P221 = Scaling: 1.000

P211 = Format: Unsigned

A013 value: 33 (21h)

(1) Read (0x03) / Object register: External register (4001h) Modbus command use register number -1

Transmission: 01 03 **40 00** 00 01 91 CA

Reception: 01 03 02 **00 21** 78 5C

(2) Read (0x03) / Object register: Internal register (120Fh)

Transmission: 01 03 **12 0E** 00 01 E0 B1

Reception: 01 03 02 **00 21** 78 5C

(3) Write (0x06) / Object register: External register (4001h)

Transmission: 01 06 **40 00 00 30** 9C 1E

Reception: 01 06 **40 00 00 30** 9C 1E

(4) Read (0x03) / Object register: Internal register (120Fh)

Transmission: 01 03 **12 0E** 00 01 E0 B1

Reception: 01 03 02 **00 30** B8 50

B-5-1-4-2 When external register overlaps with existing register (1 word)

1. P201 = External register: 1201h (A001)

P301 = Internal register: 1210h (A014)

P221 = Scaling: 1.000

P211 = Format: Unsigned

2. P202 = External register: 5001h

P302 = Internal register: 1201h (A001)

P222 = Scaling: 1.000

P212 = Format: Unsigned

A014 value: 100 (64h)

A001 value: 1 (01h)

(1) Read (0x03) / Object register: External register 1 (1201h)

Transmission: 01 03 **12 00** 00 01 81 72

Reception: 01 03 02 **00 64** B9 AF

(2) Read (0x03) / Object register: Internal register 1 (1210h)

Transmission: 01 03 **12 0F** 00 01 B1 71

Reception: 01 03 02 **00 64** B9 AF

(3) Write (0x06) / Object register: External register 1 (1201h)

Transmission: 01 06 **12 00 00 50** 8C 8E

Reception: 01 06 **12 00 00 50** 8C 8E

(4) Read (0x03) / Object register: Internal register 1 (1210h)

Transmission: 01 03 **12 0F** 00 01 B1 71

Reception: 01 03 02 **00 50** B8 78

(5) Read (0x03) / Object register: External register 2 (5001h)

Transmission: 01 03 **50 00** 00 01 95 0A

Reception: 01 03 02 **00 01** 79 84

B-5-1-4-3 When external register overlaps with existing register (2-word higher rank)

P201 = External register: 1218h (A021 (HIGH))

P301 = Internal register: 120Fh (A013)

P221 = Scaling: 1.000

P211 = Format: Unsigned

A013 value: 33 (21h)

(1) Read (0x03) / Object register: External register (1218h)

Transmission: 01 03 **12 17** 00 01 31 76

Reception: 01 03 02 **00 21** 78 5C

(2) Read (0x03) / Object register: Internal register (120Fh)

Transmission: 01 03 **12 0E** 00 01 E0 B1

Reception: 01 03 02 **00 21** 78 5C

(3) Read (0x03) / Object register: 1219h (A021 (LOW))

Transmission: 01 03 **12 18** 00 01 01 75

Reception: 01 83 **32 C0** E5 (Error 32h: access to duplication register)

(4) Write (0x10) / Object register: 1219h (A021 (LOW))

Transmission: 01 10 **12 18** 00 02 04 00 00 10 00 2A 65

Reception: 01 90 **32 CD** D5 (Error 32h: access to duplication register)

B-5-1-4-4 When an external register overlaps with the existing register (2-word low rank)

P201 = External register: 1217h (A020 (LOW))

P301 = Internal register: 120Fh (A013)

P221 = Scaling: 1.000

P211 = Format: Unsigned

A013 value: 33 (21h)

(1) Read (0x03) / Object register: External register (1217h)

Transmission: 01 03 **12 16** 00 01 60 B6

Reception: 01 03 02 **00 21** 78 5C

(2) Read (0x03) / Object register: Internal register (120Fh)

Transmission: 01 03 **12 0E** 00 01 E0 B1

Reception: 01 03 02 **00 21** 78 5C

(3) Read (0x03) / Object register: 1216h (A020 (HIGH))

Transmission: 01 03 **12 15** 00 01 90 B6

Reception: 01 83 **32** C0 E5 (Error 32h: access to duplication register)

(4) Write (0x10) / Object register: 1216h (A020 (HIGH))

Transmission: 01 10 **12 15** 00 02 04 **00 00 10 00** EB FC

Reception: 01 90 **32** CD D5 (Error 32h: access to duplication register)

B-5-1-4-5 When internal register is not correct

1. P201 = External register: 6001h

P301 = Internal register: 0000h

P221 = Scaling: 1.000

P211 = Format: Unsigned

2. P202 = External register: 6002h

P302 = Internal register: 1216h (A020 (HIGH))

P222 = Scaling: 1.000

P212 = Format: Unsigned

3. P203 = External register: 6003h

P303 = Internal register: 1217h (A020 (LOW))

P223 = Scaling: 1.000

P213 = Format: Unsigned

4. P204 = External register: 6004h

P304 = Internal register: 12FFh

P224 = Scaling: 1.000

P214 = Format: Unsigned