## 4.4 Communication Functions

The inverter can engage in RS485 communications with an external control system that is connected to the TM2 terminal block (on the control circuit terminal block board) of the inverter. The SJ700 series inverter shares the ASCII communication protocol with the SJ300 and L300P series inverters.

Related code
A001: Frequency source setting
A002: Run command source setting
C071: Communication speed selection
C072: Node allocation
C073: Communication data length selection
C074: Communication parity selection
C075: Communication stop bit selection
C078: Communication wait time
C079: Communication mode selection

(1) Communication specifications

| Item | ASCII mode | Modbus-RTU mode | Remarks |
|---|---|---|---|
| Transmission speed | 2,400, 4,800, 9,600, or 19,200 bps | | Selection with the digital operator |
| Communication method | Half-duplex communication | | |
| Synchronization method | Start-stop transmission | Asynchronous transmission | |
| Transmission code | ASCII code | Binary code | |
| Transmission method | Transmission beginning with the lowest-order bit | | |
| Applicable interface | RS485 | | |
| Data bit length | 7 or 8 bits | 8 bits | Selection with the digital operator |
| Parity | No parity, even parity, or odd parity | | Selection with the digital operator |
| Stop bit length | 1 or 2 bits | | Selection with the digital operator |
| Initiation method | Initiation only by a command from the external control system | | |
| Waiting time | 10 to 1,000 ms | 0 to 1,000 ms | Setting with the digital operator |
| Connection format | 1-to-N connection (N: Maximum of 32 [inverters]) | | Station number to be selected with the digital operator |
| Error check | Overrun, framing, BCC, vertical parity, and longitudinal parity errors | Overrun, framing, CRC-16, and longitudinal parity errors | |

<Specifications and connections of RS485 ports>
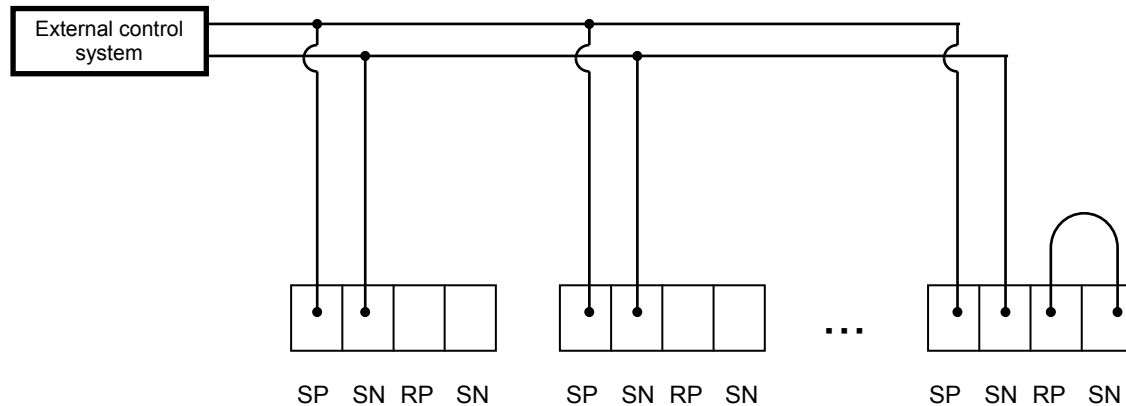For the RS485 communication function, use the TM2 terminal block on the control circuit terminal block board.



Control circuit block

Control circuit block board
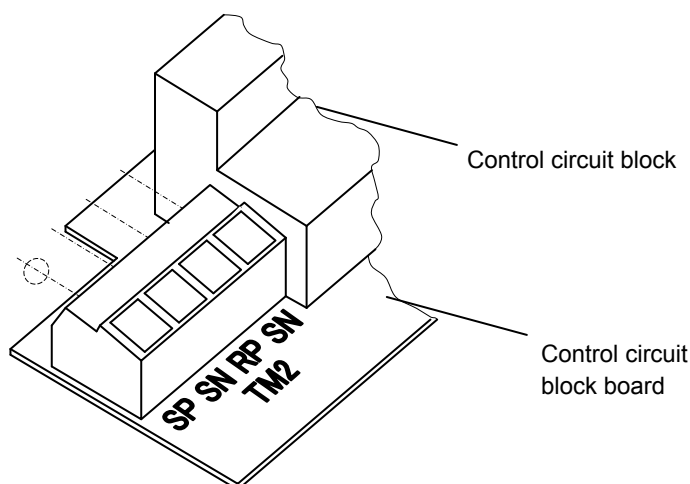
| Abbreviated name of terminal | Description |
|---|---|
| SP | Positive signal terminal for transmission |
| SN | Negative signal terminal for transmission |
| RP | Terminal to enable the terminating resistor |
| SN | Terminal to enable the terminating resistor |

Followings are recommended as the wire to connect TM2.
Solid-core wire    $0.14mm^2$-$1.5mm^2$(when two wires are on one terminal pole,$0.14 mm^2$-$0.5mm^2$)
Standard wire    $0.14mm^2$-$1.0mm^2$(when two wires are on one terminal pole,$0.14 mm^2$-$0.2mm^2$)
Standard wire with bar terminal    $0.25mm^2$-$0.5mm^2$(example:PC-1.25 F-7 made by J.S.T.Mfg.Co.,Ltd)
Striped covering length 5mm
Screw torque 0.22Nm-0.25Nm(screw size M2)

Connection

As illustrated below, connect the inverters in parallel to the external control system, and connect the RP and SN terminals with a jumper on the inverter at the end of the network. (Similarly jumper the RP and SN terminals when only one inverter is connected to the external control system for RS485 communication.) Connecting the RP and SN terminals enables the terminating resistor in the control circuit terminal block board of the inverter, which suppresses signal reflections.



(2) Required settings

The following table lists the inverter settings required for the RS485 communication:

| Item | Function code | Data or range of data | Description |
|---|---|---|---|
| Communication speed selection | C071 | 02 | Loopback test |
| | | 03 | 2,400 bps |
| | | 04 | 4,800 bps |
| | | 05 | 9,600 bps |
| | | 06 | 19,200 bps |
| Node allocation | C072 | 1. to 32. | Assignment of a station number to the inverter (Set this item when your inverter is connected together with other(s) to a control system.) |
| Communication data length selection | C073 | 7 | 7 bits |
| | | 8 | 8 bits |
| Communication parity selection | C074 | 00 | No parity |
| | | 01 | Even parity |
| | | 02 | Odd parity |
| Communication stop bit selection | C075 | 1 | 1 bit |
| | | 2 | 2 bits |
| Selection of operation after communication error | C076 | 00 | Tripping |
| | | 01 | Tripping after decelerating and stopping the motor |
| | | 02 | Ignoring the errors |
| | | 03 | Stopping the motor after free-running |
| | | 04 | Decelerating and stopping the motor |
| Communication trip limit time setting | C077 | 0.00 to 99.99 (s) | Limit length of time to determine communication train disconnection |
| Communication wait time | C078 | 0. to 1000. (ms) | Time to wait until the inverter returns a response |
| Communication mode selection | C079 | 00 | ASCII mode |
| | | 01 | Modbus-RTU mode |

(3) Communication test mode
Use the communication test mode to check the hardware of the RS485 communication train.

(Procedure for communication test)
1)  Remove all cables from the TM2 terminal block to perform a loopback test.
2)  Make the following setting with the digital operator of the inverter:
    - Specify "02" (loopback test) for the communication speed selection (C071).
3)  Turn the inverter power off once, and then turn it back on, whereupon the communication test begins.
4)  After the test is completed, the inverter displays one of the following:


    - When the communication is normal:

    - When the communication train is abnormal:


5)  Press the STOP/RESET key of the digital operator or the reset button on the copy unit to switch to the normal setting screen. Using the setting screen, change the setting made in step 2) to that desired.

### 4.4.2 Communication in Modbus-RTU mode

(1) Communication protocol
The communication between the inverter (slave) and external control system (master) is based on the following protocol:
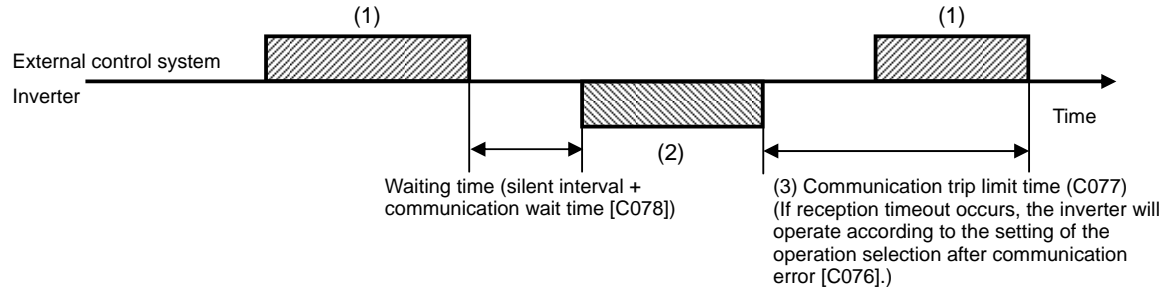


(1): Query frame that is sent from the external control system to the inverter
(2): Response frame that is sent from the inverter to the external control system
(3): Communication trip limit time (C077)

    If the inverter cannot complete the reception of a query from the master system (external control system) within the communication trip limit time, after having sent a response to the preceding query, the inverter enters the status in which to receive the query from the beginning. Subsequently, the inverter returns no response to the master system.

    After reception timeout occurs, the inverter operates according to the setting of the selection of operation after communication error (C076). For details, see the table below. Monitoring of reception timeout begins when the first communication is performed after the inverter power has been turned on or the inverter has been reset. Reception timeout is monitored only when the inverter communicates with the master system.

| Item | Function code | Range of data | Description |
|---|---|---|---|
| Selection of operation after communication error | C076 | 00: Tripping | The inverter trips (E41) after reception timeout. |
| | | 01: Tripping after stopping the motor | The inverter decelerates and stops the motor, and then trips (E41) after reception timeout. |
| | | 02: Ignoring the errors | The inverter ignores the error without tripping and alarm output. |
| | | 03: Stopping the motor after free-running (FRS) | The inverter stops the motor after free-running without tripping and alarm output after reception timeout. |
| | | 04: Decelerating and stopping the motor | The inverter decelerates and stops the motor without tripping and alarm output after reception timeout. |
| Communication trip limit time setting | C077 | 0.00 to 99.99 (s) | Limit time to determine the reception timeout |
| Communication wait time | C078 | 0. to 1000. (ms) | Time to wait until the inverter starts sending a response after reception of a query (excluding the silent interval) |

The inverter sends a response (frame (2)) always after receiving a query (frame (1)). The inverter does not actively output any frame to the external control system.

The formats of the query and response frames are described below.

**Message configuration: Query**

| |
|---|
| Header (silent interval) |
| Slave address |
| Function code |
| Data |
| Error check code |
| Trailer (silent interval) |

(i)   Slave address
The slave address is a number 1 to 32 that is assigned to the inverter (slave) beforehand. (A query is received by the inverter having the same slave address as that specified in the query.)
The query with the slave address set to "0" is broadcasted to all the connected inverters.
With a broadcast query, the master system can neither read inverter data nor perform a loopback test.

(ii)   Data
The data contains a functional instruction.
The SJ700 series inverter supports the following Modbus data format:

| Data name | Description |
|---|---|
| Coil data | 1-bit binary data that can be referenced and changed |
| Register data | 16-bit data that can be referenced and changed |

(iii)  Function code
The function code specifies the function to be executed by the inverter.
The table below lists the function codes supported by the SJ700 series inverter.

Function codes

| Function code | Function | Maximum number of data bytes in a message | Maximum data count in a message |
|---|---|---|---|
| 01h | Reads the coil status. | 4 | 32 coils (in units of bit) |
| 03h | Reads registers. | 8 | 4 registers (in units of byte) |
| 05h | Writes data to a coil. | 2 | 1 coil (in units of bit) |
| 06h | Writes data to a register. | 2 | 1 register (in units of byte) |
| 08h | Performs a loopback test. | - | |
| 0Fh | Writes data to multiple coils. | 4 | 32 coils (in units of bit) |
| 10h | Writes data to multiple registers. | 8 | 4 registers (in units of byte) |

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(iv) Error check code
The Modbus-RTU protocol uses the cyclic redundancy check (CRC) as the error check method.
The CRC code is the 16-bit data generated for a data block that has an arbitrary data length (in units of 8 bits).
A generative polynomial for CRC-16 ($X^{16} + X^{15} + X^2 + 1$) is used to generate the CRC code.

Example of CRC-16 calculation



The target data is shifted by 1 byte.
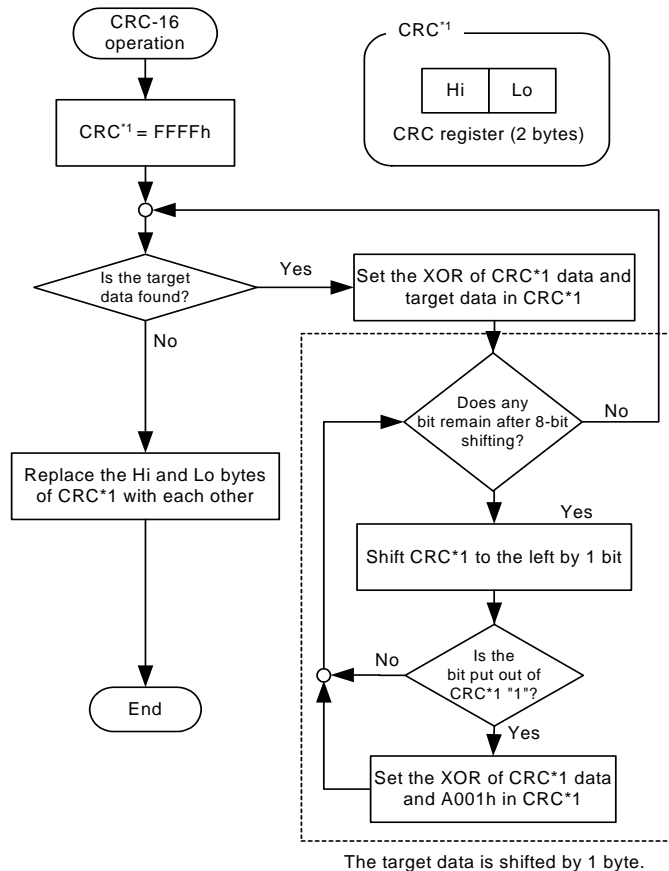
(v) Header and trailer (silent interval)
The header and trailer set the total time the inverter should wait before sending a response after having received a query from the master system.
Be sure to specify the time corresponding to the transmission of 3.5 characters (24 bits) as the waiting time. If a shorter waiting time (corresponding to the transmission of fewer than 3.5 characters) is specified, the inverter will not respond.
The actual waiting time is the sum of the silent interval (corresponding to the transmission of 3.5 characters) and the communication wait time (C078).

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**Message configuration: Response**

(i) Time required for communication
After the inverter receives a query, the inverter waits for the sum of the silent interval (corresponding to the transmission of 3.5 characters) and the communication wait time (C078) before sending a response.
After receiving a response from the inverter, the master system must wait for the silent interval (corresponding to the transmission of 3.5 characters) or longer before sending the next query to the inverter.

(ii) Normal response
If the query specifies the function code (08h) for the loopback test, the inverter returns a response that has the same contents as the query.
If the query specifies a function code (05h, 06h, 0Fh, or 10h) for writing data to registers or coils, the inverter returns the query without a change as a response.
If the query specifies a function code (01h or 03h) for reading a register or coil, the inverter returns a response that contains the slave address and function code specified in the query and the data read from the register or coil.

(iii) Response upon error

Field configuration

| Slave address |
| --- |
| Function code |
| Exception code |
| CRC-16 |

If the query includes an error (other than a communication error), the inverter returns an exception response without executing the function specified by the query.
To know the error, check the function code set in the exception response. The exception response in reply to a query includes a function code that is the sum of "80h" and the function code specified by the query.
The exception code in the exception response indicates the content of the error.

Exception codes

| Code | Description |
| --- | --- |
| 01h | An unsupported function is specified. |
| 02h | The specified address is not found. |
| 03h | The specified data has an unacceptable format. |
| 21h | The data to be written to a register exceeds the range of inverter specifications. |
| 22h | The inverter restricts the execution of the specified function:<br>- Rewriting a register that cannot be rewritten during the operation<br>- Issuing an Enter command during the operation (in undervoltage status)<br>- Writing to a register during tripping (because of undervoltage)<br>- Writing to a read-only register (coil) |

(iv) No response
The inverter ignores a query without returning any response if:
- the query is a broadcast query,
- a communication occurs during the reception of the query,
- the slave address specified in the query differs from that of the inverter,
- the time interval between data items in the query message is less than the time corresponding to the transmission of 3.5 characters, or
- the data length of the query is invalid.
Note: In the master system, set a timer to monitor the responses from the inverter, and configure the master system so that, when the inverter does not return the response to a query within a specified limit time, the master system resends the query.

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(4) Explanation of function codes

(i) Reading the coil status [01h]
This function reads the coil status (on or off).

(Example)
When reading the status of the intelligent input terminals [1] to [6] of the inverter at slave address "8":
Assume that the intelligent input terminals are in the status as shown below.

| Intelligent input terminal | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Coil number | 7 | 8 | 9 | 10 | 11 | 12 |
| Terminal status | ON | ON | ON | OFF | ON | OFF |

Coils 13 and 14 are off.

Query

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 08 |
| 2 | Function code | 01 |
| 3 | Starting coil number (upper digit) (*2) | 00 |
| 4 | Starting coil number (lower digit) (*2) | 06 |
| 5 | Number of coils (upper digit) (*3) | 00 |
| 6 | Number of coils (lower digit) (*3) | 06 |
| 7 | CRC-16 code (upper digit) | 5C |
| 8 | CRC-16 code (lower digit) | 90 |

Response

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 08 |
| 2 | Function code | 01 |
| 3 | Number of data bytes | 01 |
| 4 | Coil data (*4) | 17 |
| 5 | CRC-16 code (upper digit) | 12 |
| 6 | CRC-16 code (lower digit) | 1A |

*4 The data as many as the specified number of data bytes is transferred.

*1 This query cannot be broadcasted.
*2 Note that the starting coil number is 1 less than the actual coil number of the coil to be read first.
*3 If 0 or a value more than 32 is specified as the number of coils to be read, the inverter will respond with error code "03h".

The data received in the response indicates the status of coils 7 to 14. Read the received data (17h = 00010111b) as shown below. The least-significant bit indicates the status of coil 7.

| Coil number | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 |
|---|---|---|---|---|---|---|---|---|
| Coil status | OFF | OFF | OFF | ON | OFF | ON | ON | ON |

If the query has specified the reading of an undefined coil, the data on the said coil is represented by "0" in the response.
If the function to read the coil status cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

(ii) Reading registers [03h]

This function reads a specified number of registers beginning at a specified register address.

(Example)

When reading the trip history data from the inverter at slave address "5":

Assume that the conditions of the past three trips are as follows:

| SJ700 command | d081 (factor of most recent trip) | d081 (inverter state at most recent trip) |
|---|---|---|
| Register number | 0012h | 0013h |
| Trip factor (upper digit) | Overvoltage (E07) | Decelerating (02) |

Query

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 05 |
| 2 | Function code | 03 |
| 3 | Starting register number (upper digit) (*2) | 00 |
| 4 | Starting register number (lower digit) (*2) | 11 |
| 5 | Number of registers (upper digit) | 00 |
| 6 | Number of registers (lower digit) | 02 |
| 7 | CRC-16 code (upper digit) | 95 |
| 8 | CRC-16 code (lower digit) | 8A |

*1 This query cannot be broadcasted.

*2 Note that the starting coil number is 1 less than the actual coil number of the coil to be read first.

Response

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 05 |
| 2 | Function code | 03 |
| 3 | Number of data bytes (*3) | 04 |
| 4 | Starting register number (upper digit) | 00 |
| 5 | Starting register number (lower digit) | 07 |
| 6 | Starting register number + 1 (upper digit) | 00 |
| 7 | Starting register number + 1 (lower digit) | 02 |
| 8 | CRC-16 code (upper digit) | 36 |
| 9 | CRC-16 code (lower digit) | 37 |

*3 The data equivalent to the specified number of data bytes is transferred. In this example, 4 bytes are transferred because the data on two registers is returned in the response.

Read the data received in the response as follows:

| Response buffer | 4 | 5 | 6 | 7 |
|---|---|---|---|---|
| Starting register number | +0 (upper digit) | +0 (lower digit) | +1 (upper digit) | +1 (lower digit) |
| Response data | 00h | 07h | 00h | 02h |
| Trip condition | Trip due to overvoltage | | Decelerating | |

If the function to read registers cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

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(iii) Writing data to a specified coil [05h]

This function writes data to a specified coil

The following table shows the updating of the coil status.

|  | Coil status | |
|---|---|---|
|  | OFF→ON | ON→OFF |
| Updating data (upper digit) | FFh | 00h |
| Updating data (lower digit) | 00h | 00h |

(Example)

When sending an operation command to the inverter at slave address "10":

To start the inverter operation, "03" must be set in parameter "A002". Coil 1 is used to turn on an operation command.

Query

|  | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 0A |
| 2 | Function code | 05 |
| 3 | Starting coil number (upper digit) (*2) | 00 |
| 4 | Starting coil number (lower digit) (*2) | 00 |
| 5 | Updating data (upper digit) | FF |
| 6 | Updating data (lower digit) | 00 |
| 7 | CRC-16 code (upper digit) | 8D |
| 8 | CRC-16 code (lower digit) | 41 |

Response

|  | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 0A |
| 2 | Function code | 05 |
| 3 | Starting coil number (upper digit) | 00 |
| 4 | Starting coil number (lower digit) | 00 |
| 5 | Updating data (upper digit) | FF |
| 6 | Updating data (lower digit) | 00 |
| 7 | CRC-16 code (upper digit) | 8D |
| 8 | CRC-16 code (lower digit) | 41 |

*1  If this query is broadcasted, no inverter will return any response.

*2  Note that the starting coil number is 1 less than the actual coil number of the coil to be read first.

If the function to write data to a coil cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

(iv) Writing data to a specified register [06h]

This function writes data to a specified register.

(Example)

When setting "50 Hz" as the base frequency setting (A003) in the inverter at slave address "5":

Since register "1203h" to store the base frequency setting (A003) has a data resolution of 1 Hz, specify "50" (0032h) as the updating data to set "50 Hz".

Query

|  | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 05 |
| 2 | Function code | 06 |
| 3 | Starting register number (upper digit) (*2) | 12 |
| 4 | Starting register number (lower digit) (*2) | 02 |
| 5 | Updating data (upper digit) | 00 |
| 6 | Updating data (lower digit) | 32 |
| 7 | CRC-16 code (upper digit) | AD |
| 8 | CRC-16 code (lower digit) | 23 |

Response

|  | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 05 |
| 2 | Function code | 06 |
| 3 | Starting register number (upper digit) | 12 |
| 4 | Starting register number (lower digit) | 02 |
| 5 | Updating data (upper digit) | 00 |
| 6 | Updating data (lower digit) | 32 |
| 7 | CRC-16 code (upper digit) | AD |
| 8 | CRC-16 code (lower digit) | 23 |

*1  If this query is broadcasted, no inverter will return any response.

*2  Note that the starting coil number is 1 less than the actual coil number of the coil to be read first.

If the function to write data to a specified register cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

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(v) Performing a loopback test [08h]

The loopback test function is used to check the communication between the external control system (master) and the inverter (slave).

(Example)

When performing a loopback test with the inverter at slave address "1":

Query

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 01 |
| 2 | Function code | 08 |
| 3 | Diagnosis subcode (upper digit) | 00 |
| 4 | Diagnosis subcode (lower digit) | 00 |
| 5 | Data (upper digit) | Arbitrary |
| 6 | Data (lower digit) | Arbitrary |
| 7 | CRC-16 code (upper digit) | CRC |
| 8 | CRC-16 code (lower digit) | CRC |

*1 This query cannot be broadcasted.

Response

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 01 |
| 2 | Function code | 08 |
| 3 | Diagnosis subcode (upper digit) | 00 |
| 4 | Diagnosis subcode (lower digit) | 00 |
| 5 | Data (upper digit) | Arbitrary |
| 6 | Data (lower digit) | Arbitrary |
| 7 | CRC-16 code (upper digit) | CRC |
| 8 | CRC-16 code (lower digit) | CRC |

The diagnosis subcode only conforms to the echoing of query data (00h, 00h). It cannot be used for other commands.

(vi) Writing data to multiple coils [0Fh]

This function rewrites data in sequential coils.

(Example)

When updating the status of the intelligent input terminals [1] to [6] of the inverter at slave address "5":

The status of the intelligent input terminals is updated to the status shown in the following table:

| Intelligent input terminal | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Coil number | 7 | 8 | 9 | 10 | 11 | 12 |
| Terminal status | ON | ON | ON | OFF | ON | OFF |

Query

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 05 |
| 2 | Function code | 0F |
| 3 | Starting coil number (upper digit) (*2) | 00 |
| 4 | Starting coil number (lower digit) (*2) | 06 |
| 5 | Number of coils (upper digit) | 00 |
| 6 | Number of coils (lower digit) | 06 |
| 7 | Number of data bytes (*3) | 02 |
| 8 | Updating data (upper digit) (*3) | 17 |
| 9 | Updating data (lower digit) (*3) | 00 |
| 10 | CRC-16 code (upper digit) | DB |
| 11 | CRC-16 code (lower digit) | 3E |

Response

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address | 05 |
| 2 | Function code | 0F |
| 3 | Starting coil number (upper digit) | 00 |
| 4 | Starting coil number (lower digit) | 06 |
| 5 | Number of coils (upper digit) | 00 |
| 6 | Number of coils (lower digit) | 06 |
| 7 | CRC-16 code (upper digit) | 34 |
| 8 | CRC-16 code (lower digit) | 4C |

*1 If this query is broadcasted, no inverter will return any response.

*2 Note that the starting coil number is 1 less than the actual coil number of the coil to which the data is to be written first.

*3 The updating data consists of the upper and lower digits. Even when updating an odd number of data bytes, add 1 to the number of data bytes to make it an even number before specifying the number of data

If the function to write data to multiple coils cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

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(vii) Writing data to multiple registers [10h]
This function writes data to sequential registers.

(Example)
When setting "3,000 Hz" as the Acceleration (1) time (F002) in the inverter at slave address "1":
Since register "1103h" and "1104h" to store the Acceleration (1) time (F002) have a data resolution of 0.01 seconds, specify "300000" (493E0h) as the updating data to set "3,000 seconds".

Query

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 01 |
| 2 | Function code | 10 |
| 3 | Starting register address (upper digit) (*2) | 11 |
| 4 | Starting register address (lower digit) (*2) | 02 |
| 5 | Number of registers (upper digit) | 00 |
| 6 | Number of registers (lower digit) | 02 |
| 7 | Number of data bytes (*3) | 04 |
| 8 | Updating data 1 (upper digit) | 00 |
| 9 | Updating data 1 (lower digit) | 04 |
| 10 | Updating data 2(upper digit) | 93 |
| 11 | Updating data 2(lower digit) | E0 |
| 12 | CRC-16 code (upper digit) | 9E |
| 13 | CRC-16 code (lower digit) | 9F |

Response

| | Field name | Sample setting (hexadecimal) |
|---|---|---|
| 1 | Slave address (*1) | 01 |
| 2 | Function code | 10 |
| 3 | Starting register address (upper digit) (*2) | 11 |
| 4 | Starting register address (lower digit) (*2) | 02 |
| 5 | Number of registers (upper digit) | 00 |
| 6 | Number of registers (lower digit) | 02 |
| 7 | CRC-16 code (upper digit) | E5 |
| 8 | CRC-16 code (lower digit) | 34 |

*1  If this query is broadcasted, no inverter will return any response.
*2  Note that the starting register address is 1 less than the actual address of the register to which the data is to be written first.
*3  As the number of bytes, do not specify the number of registers but the number of bytes to be actually updated.

If the function to write data to multiple registers cannot be executed normally, the inverter will return an exception response. For details, see Item (viii), "Exception response."

(viii) Exception response
The master system requests the inverter (slave) to return a response upon reception of a query other than broadcasted queries. The inverter must return the response that matches the query it has received. However, if an error is found in a query, the inverter will return an exception response.

The exception response consists of the following fields:

Field configuration

| |
|---|
| Slave address |
| Function code |
| Exception code |
| CRC-16 code |

Details of the field configuration are described below. The exception response in reply to a query includes a function code that is the sum of "80h" and the function code specified by the query. The exception code in the exception response indicates the content of the error.

Function codes

| Query | Exception response |
|---|---|
| 01h | 81h |
| 03h | 83h |
| 05h | 85h |
| 06h | 86h |
| 0Fh | 8Fh |
| 10h | 90h |

Exception codes

| Code | Description |
|---|---|
| 01h | An unsupported function is specified. |
| 02h | The specified address is not found. |
| 03h | The specified data has an unacceptable format. |
| 21h | The data to be written to a register exceeds the range of inverter specifications. |
| 22h | The inverter restricts the execution of the specified function:<br>- Rewriting a register that cannot be rewritten during the operation<br>- Issuing an Enter command during the operation (in undervoltage status)<br>- Writing to a register during tripping (because of undervoltage)<br>- Writing to a read-only register (coil) |

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(5) Enter command (storing the updates of register data)

Neither the command (06h) to write data to a register nor the command (10h) to write data to multiple registers can store the updates they made in the internal memory of the inverter. Turning the inverter power off without storing the updates deletes them and restores the original register settings. If you intend to store register updates in the internal memory of the inverter, issue the Enter command as described below.
If you have updated a control constant, you must recalculate the motor constants. In such cases, use register "0900h" for recalculation as described below.

### How to issue the Enter command
With the command (06h) to write data to registers, write all register data to the internal memory. To recalculate the motor constants, use the same command to write the data shown in the following table to register "0900h":

| Data to be written | Description |
| --- | --- |
| 0000 | Recalculating the motor constants |
| 0001 | Storing the register data |
| Other than the above | Recalculating the motor constants and storing the register data |

Notes:
- Execution of the Enter command requires considerable time. To check whether data writing is in progress, monitor the status of the signal (coil No. 001Ah) that indicates whether data writing is in progress.
- The internal memory device of the inverter is subject to a limitation on the number of rewriting operations (about 100,000 times). Frequent use of the Enter command may shorten the inverter life.

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(6) List of registers

The "R/W" column of the list indicates whether the coils and registers are read-only or readable and writable.
"R" indicates a read-only coil or register. "R/W" indicates a readable and writable coil or register.

(i) List of coils

| Coil No. | Item | R/W | Setting |
|---|---|---|---|
| 0000h | (Reserved) | - | |
| 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) |
| 000E h | Intelligent input terminal [8] | R/W | 1: ON, 0: OFF (*1) |
| 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 | Unused | R | |
| 0013h | RUN (running) | R | 1: Tripping, 0: Normal |
| 0014h | FA1 (constant-speed reached) | R | 1: ON, 0: OFF |
| 0015h | FA2 (set frequency overreached) | R | 1: ON, 0: OFF |
| 0016h | OL (overload notice advance signal (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 | IP (instantaneous power failure) | R | 1: ON, 0: OFF |
| 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 |
| 002Dh | OL2 (overload notice advance signal (2)) | R | 1: ON, 0: OFF |
| 002Eh | Odc: Analog O disconnection detection | - | |
| 002Fh | OIDc: Analog OI disconnection detection | - | |
| 0030h | O2Dc: Analog O2 disconnection detection | - | |
| 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 |

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| Coil No. | Item | R/W | Setting |
|---|---|---|---|
| 0035h | LOG2 (logical operation result 2) | R | 1: ON, 0: OFF |
| 0036h | LOG3 (logical operation result 3) | R | 1: ON, 0: OFF |
| 0037h | LOG4 (logical operation result 4) | R | 1: ON, 0: OFF |
| 0038h | LOG5 (logical operation result 5) | R | 1: ON, 0: OFF |
| 0039h | LOG6 (logical operation result 6) | R | 1: ON, 0: OFF |
| 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 | M04 (general output 4) | R | 1: ON, 0: OFF |
| 0043h | M05 (general output 5) | R | 1: ON, 0: OFF |
| 0044h | M06 (general output 6) | R | 1: ON, 0: OFF |
| 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:FF |
| 0051h | WCO (window comparator OI) | R | 1: ON, 0:FF |
| 0052h | WCO (window comparator O2) | R | 1: ON, 0:FF |

*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.

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

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(ii) List of registers (frequency settings and trip monitoring)

| Register No. | Function name | Function code | R/W | Monitoring and setting items | Data resolution |
|---|---|---|---|---|---|
| 0001h | Frequency source setting | 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, 1: Waiting for Vdc establishment, 2: Stopping, 3: Running, 4: Free-run stop (FRS), 5: Jogging, 6: DC braking, 7: Frequency being input, 8: Retrying operation, 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 forward rotation to reverse rotation, 8: Switching from reverse rotation to forward rotation, 9: Starting forward rotation, 10: Starting reverse rotation | - |
| 0006h | PID feedback | - | R/W | 0 to 10000 | 0.01 [%] |
| 0007h to 0010h | (Reserved) | - | R | Inaccessible | - |
| 0011h | Trip Counter | d080 | R | 0 to 65530 | 1 [time] |
| 0012h | Trip monitoring 1 (factor) | d081 | R | See the list of inverter trip factors below | - |
| 0013h | Trip monitoring 1 (inverter status) | | | See the list of inverter trip factors below | - |
| 0014h | Trip monitoring 1 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 0015h | Trip monitoring 1 (frequency) (low) | | | | |
| 0016h | Trip monitoring 1 (current) | | | Output current at tripping | 0.1 A |
| 0017h | Trip monitoring 1 (voltage) | | | DC input voltage at tripping | 1 V |
| 0018h | Trip monitoring 1 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 0019h | Trip monitoring 1 (running time) (low) | | | | |
| 001Ah | Trip monitoring 1 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 001Bh | Trip monitoring 1 (power-on time) (low) | | | | |
| 001Ch | Trip monitoring 2 (factor) | d082 | R | See the list of inverter trip factors below | - |
| 001Dh | Trip monitoring 2 (inverter status) | | | See the list of inverter trip factors below | - |
| 001Eh | Trip monitoring 2 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 001Fh | Trip monitoring 2 (frequency) (low) | | | | |
| 0020h | Trip monitoring 2 (current) | | | Output current at tripping | 0.1 A |
| 0021h | Trip monitoring 2 (voltage) | | | DC input voltage at tripping | 1 V |
| 0022h | Trip monitoring 2 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 0023h | Trip monitoring 2 (running time) (low) | | | | |
| 0024h | Trip monitoring 2 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 0025h | Trip monitoring 2 (power-on time) (low) | | | | |
| 0026h | Trip monitoring 3 (factor) | d083 | R | See the list of inverter trip factors below | - |
| 0027h | Trip monitoring 3 (inverter status) | | | See the list of inverter trip factors below | - |
| 0028h | Trip monitoring 3 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 0029h | Trip monitoring 3 (frequency) (low) | | | | |
| 002Ah | Trip monitoring 3 (current) | | | Output current at tripping | 0.1 A |
| 002Bh | Trip monitoring 3 (voltage) | | | DC input voltage at tripping | 1 V |
| 002Ch | Trip monitoring 3 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 002Dh | Trip monitoring 3 (running time) (low) | | | | |
| 002Eh | Trip monitoring 3 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 002Fh | Trip monitoring 3 (power-on time) (low) | | | | |
| 0030h | Trip monitoring 4 (factor) | d084 | R | See the list of inverter trip factors below | - |
| 0031h | Trip monitoring 4 (inverter status) | | | See the list of inverter trip factors below | - |
| 0032h | Trip monitoring 4 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 0033h | Trip monitoring 4 (frequency) (low) | | | | |
| 0034h | Trip monitoring 4 (current) | | | Output current at tripping | 0.1 A |
| 0035h | Trip monitoring 4 (voltage) | | | DC input voltage at tripping | 1 V |
| 0036h | Trip monitoring 4 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 0037h | Trip monitoring 4 (running time) (low) | | | | |
| 0038h | Trip monitoring 4 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 0039h | Trip monitoring 4 (power-on time) (low) | | | | |

| Register No. | Function name | Function code | R/W | Monitoring and setting items | Data resolution |
|---|---|---|---|---|---|
| 003Ah | Trip monitoring 5 (factor) | d085 | R | See the list of inverter trip factors below | - |
| 003Bh | Trip monitoring 5 (inverter status) | | | See the list of inverter trip factors below | - |
| 003Ch | Trip monitoring 5 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 003Dh | Trip monitoring 5 (frequency (low) | | | | |
| 003Eh | Trip monitoring 5 (current) | | | Output current at tripping | 0.1 A |
| 003Fh | Trip monitoring 5 (voltage) | | | DC input voltage at tripping | 1 V |
| 0040h | Trip monitoring 5 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 0041h | Trip monitoring 5 (running time) (low) | | | | |
| 0042h | Trip monitoring 5 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 0043h | Trip monitoring 5 (power-on time) (low) | | | | |
| 0044h | Trip monitoring 6 (factor) | d086 | R | See the list of inverter trip factors below | - |
| 0045h | Trip monitoring 6 (inverter status) | | | See the list of inverter trip factors below | - |
| 0046h | Trip monitoring 6 (frequency) (high) | | | 0 to 40000 | 0.01 [Hz] |
| 0047h | Trip monitoring 6 (frequency (low) | | | | |
| 0048h | Trip monitoring 6 (current) | | | Output current at tripping | 0.1 A |
| 0049h | Trip monitoring 6 (voltage) | | | DC input voltage at tripping | 1 V |
| 004Ah | Trip monitoring 6 (running time) (high) | | | Cumulative running time at tripping | 1h |
| 004Bh | Trip monitoring 6 (running time) (low) | | | | |
| 004Ch | Trip monitoring 6 (power-on time) (high) | | | Cumulative power-on time at tripping | 1h |
| 004Dh | Trip monitoring 6 (power-on time) (low) | | | | |
| 004Eh | Programming error monitoring | d090 | R | Warning code | - |
| 004Fh to 08FFh | Unused | - | - | Inaccessible | - |
| 0900h | Writing to EEPROM | - | W | 0000: Motor constant recalculation 0001: Set data storage in EEPROM Other: Motor constant recalculation and set data storage in EEPROM | - |
| 0901h 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.

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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 |
| Overcurrent protection during constant-speed operation | 1 | Stopping | 1 |
| Overcurrent protection during deceleration | 2 | Decelerating | 2 |
| Overcurrent protection during acceleration | 3 | Constant-speed operation | 3 |
| Overcurrent protection during stopping | 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 | SON or FOC operation in progress | 9 |
| CT error | 10 | | |
| CPU error | 11 | | |
| External trip | 12 | | |
| USP error | 13 | | |
| Ground-fault protection | 14 | | |
| Input overvoltage protection | 15 | | |
| Instantaneous power failure protection | 16 | | |
| Power-module temperature error (with the fan stopped) | 20 | | |
| Power-module temperature error | 21 | | |
| Gate array communication error | 23 | | |
| Phase loss input protection | 24 | | |
| Main circuit error | 25 | | |
| IGBT error | 30 | | |
| Thermistor error | 35 | | |
| Braking error (added) | 36 | | |
| Emergency stop error | 37 | | |
| Electronic thermal protection at low speeds | 38 | | |
| 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 1 error 0 to 9 | 60 to 69 | | |
| Option 2 error 0 to 9 | 70 to 79 | | |

### (iii) List of registers (monitoring)

| Register No. | Function name | Function code | R/W | Monitoring and setting items | Data resolution |
|---|---|---|---|---|---|
| 1001h | Output frequency monitoring | d001 (high) | R | 0 to 40000 | 0.01 [Hz] |
| 1002h | | d001 (low) | | | |
| 1003h | Output current monitoring | d002 | R | 0 to 9999 | 0.1 [A] |
| 1004h | Rotation direction minitoring | d003 | R | 0: Stopping, 1: Forward rotation, 2: Reverse rotation | 0.1 [Hz] |
| 1005h | Process variable (PV), PID feedback monitoring | d004 (high) | R | 0 to 9990 | 0.1 |
| 1006h | | d004 (low) | | | |
| 1007h | Intelligent input terminal status | d005 | R | 2^0: Terminal 1 to 2^7: Terminal 8 | 1 bit |
| 1008h | Intelligent output terminal status | d006 | R | 2^0: Terminal 11 to 2^4: Terminal 15 | 1 bit |
| 1009h | Scaled output frequency monitoring | d007 (high) | R | 0 to 39960 | 0.01 |
| 100Ah | | d007 (low) | | | |
| 100Bh | Actual-frequency monitoring | d008 (high) | R | -40000 to +40000 | 0.01 [Hz] |
| 100Ch | | d008 (low) | R | | |
| 100Dh | Torque command monitoring | d009 | R | -200 to +200 | 1 [%] |
| 100Eh | Torque bias monitoring | d010 | R | -200 to +200 | 1 [%] |
| 100Fh | (Reserved) | - | - | Inaccessible | - |
| 1010h | Torque monitoring | d012 | R | -200 to +200 | 1 [%] |
| 1011h | Output voltage monitoring | d013 | R | 0 to 6000 | 0.1 [V] |
| 1012h | Power monitoring | d014 | R | 0 to 9999 | 0.1 [kW] |
| 1013h | Cumulative power monitoring | d015 (high) | R | 0 to 9999999 | 0.1 |
| 1014h | | d015 (low) | | | |
| 1015h | Cumulative operation RUN time monitoring | d016 (high) | R | 0 to 999900 | 0.1 |
| 1016h | | d016 (low) | | | |
| 1017h | Cumulative power-on time monitoring | d017 (high) | R | 0 to 999900 | 1 [h] |
| 1018h | | d017 (low) | | | |
| 1019h | Heat sink temperature monitoring | d018 | R | -200 to 2000 | 0.1 [℃] |
| 101Ah | Motor temperature monitoring | d019 | R | -200 to 2000 | 0.1 [℃] |
| 101Bh | (Reserved) | - | - | Inaccessible | - |
| 101Ch | | | | | |
| 101Dh | Life-check monitoring | d022 | R | 2^0: Capacitor on main circuit board<br>2^1: Low cooling-fan speed | 1 bit |
| 101Eh to 1025h | (Reserved) | - | - | Inaccessible | - |
| 1026h | DC voltage monitoring (across P and N) | d102 | R | 0 to 9999 | 0.1 [V] |
| 1027h | BRD load factor monitoring | d103 | R | 0 to 1000 | 0.1 [%] |
| 1028h | Electronic thermal overload monitoring | d104 | R | 0 to 1000 | 0.1 [%] |
| 1029h to 102Dh | (reserved) | - | - | Inaccessible | - |
| 102Eh | User monitor 1 | d025(HIGH) | R | -2147483647 to 2147483647 | 1 |
| 102Fh | | d025(LOW) | R | | |
| 1030h | User monitor 1 | d026(HIGH) | R | -2147483647 to 2147483647 | 1 |
| 1031h | | d026(LOW) | R | | |
| 1032h | User monitor 1 | d027(HIGH) | R | -2147483647 to 2147483647 | 1 |
| 1033h | | d027(LOW) | R | | |
| 1034h | Pulse counter | d028(HIGH) | R/W | 0 to 2147483647 | 1 |
| 1035h | | d028(LOW) | R/W | | |
| 1036h | Position setting monitor | d029(HIGH) | R | -2147483647 to 2147483647 | 1 |
| 1037h | | d029(LOW) | R | | |
| 1038h | Position feedback monitor | d030(HIGH) | R | -2147483647 to 2147483647 | 1 |
| 1039h | | d030(LOW) | R | | |
| 103Ah to 1102h | Unused | - | | Inaccessible | - |

### (iv) List of registers

| Register No. | Function name | Function code | R/W | Monitoring and setting items | Data resolution |
|---|---|---|---|---|---|
| 1103h | Acceleration (1) time setting | F002 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 1104h | | F002 (low) | | | |
| 1105h | Deceleration (1) time setting | F003 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 1106h | | F003 (low) | | | |
| 1107h | Keypad Run key routing | F004 | R/W | 0 (forward rotation), 1 (reverse rotation) | - |
| 1108h to 1200h | Unused | - | - | Inaccessible | - |

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(v) List of registers (function modes)

| Register No. | Function name | Function code | R/W | Monitoring and setting items | Data resolution |
|---|---|---|---|---|---|
| 1201h | Frequency source setting | A001 | R/W | 0 (keypad potentiometer), 1 (control circuit terminal block), 2 (digital operator), 3 (RS485), 4 (option 1), 5 (option 2), 6 (pulse train input), 7 (easy sequence), 10 (operation function result) | - |
| 1202h | Run command source setting | A002 | R/W | 1 (control circuit terminal block), 2 (digital operator), 3 (RS485), 4 (option 1), 5 (option 2) | - |
| 1203h | Base frequency setting | A003 | R/W | 30 to "maximum frequency" | 1 [Hz] |
| 1204h | Maximum frequency setting | A004 | R/W | 30 to 400 | 1 [Hz] |
| 1205h | [AT] selection | A005 | R/W | 0 (switching between O and OI terminals), 1 (switching between O and O2 terminals), 2 (switching between O terminal and keypad potentiometer), 3 (switching between OI terminal and keypad potentiometer), 4 (switching between O2 and keypad potentiometer) | - |
| 1206h | [O2] selection | A006 | R/W | 0 (single), 1 (auxiliary frequency input via O and OI terminals) (nonreversible), 2 (auxiliary frequency input via O and OI terminals) (reversible), 3 (disabling O2 terminal) | - |
| 1207h to 120Ah | (Reserved) | - | - | Inaccessible | - |
| 120Bh | [O]-[L] input active range start frequency | A011 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 120Ch | | A011 (low) | | | |
| 120Dh | [O]-[L] input active range end frequency | A012 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 120Eh | | A012 (low) | | | |
| 120Fh | [O]-[L] input active range start voltage | A013 | R/W | 0 to "[O]-[L] input active range end voltage" | 1 [%] |
| 1210h | [O]-[L] input active range end voltage | A014 | R/W | "[O]-[L] input active range start voltage" to 100 | 1 [%] |
| 1211h | [O]-[L] input active range start frequency selection | A015 | R/W | 0 (external start frequency), 1 (0 Hz) | - |
| 1212h | External frequency filter time const. | A016 | R/W | 1 to 30 or 31 (500 ms filter ±0.1 Hz with hysteresis) | 1 |
| 1213h | Easy sequence function selection | A017 | R/W | 0 (disabling), 1 (enabling) | - |
| 1214h | (Reserved) | - | R/W | Inaccessible | - |
| 1215h | Multispeed operation selection | A019 | R/W | 0 (binary), 1 (bit) | - |
| 1216h | Multispeed frequency setting | A020 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1217h | | A020 (low) | R/W | | |
| 1218h | Multispeed 1 setting | A021 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1219h | | A021 (low) | R/W | | |
| 121Ah | Multispeed 2 setting | A022 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 121Bh | | A022 (low) | R/W | | |
| 121Ch | Multispeed 3 setting | A023 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 121Dh | | A023 (low) | R/W | | |
| 121Eh | Multispeed 4 setting | A024 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 121Fh | | A024 (low) | R/W | | |
| 1220h | Multispeed 5 setting | A025 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1221h | | A025 (low) | R/W | | |
| 1222h | Multispeed 6 setting | A026 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1223h | | A026 (low) | R/W | | |
| 1224h | Multispeed 7 setting | A027 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1225h | | A027 (low) | R/W | | |
| 1226h | Multispeed 8 setting | A028 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1227h | | A028 (low) | R/W | | |
| 1228h | Multispeed 9 setting | A029 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1229h | | A029 (low) | R/W | | |
| 122Ah | Multispeed 10 setting | A030 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 122Bh | | A030 (low) | R/W | | |
| 122Ch | Multispeed 11 setting | A031 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 122Dh | | A031 (low) | R/W | | |
| 122Eh | Multispeed 12 setting | A032 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 122Fh | | A032 (low) | R/W | | |
| 1230h | Multispeed 13 setting | A033 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1231h | | A033 (low) | R/W | | |
| 1232h | Multispeed 14 setting | A034 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |
| 1233h | | A034 (low) | R/W | | |
| 1234h | Multispeed 15 setting | A035 (high) | R/W | 0 or "start frequency" to "maximum frequency" | 0.01 [Hz] |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1236h | (Reserved) | - | - | Inaccessible | - |
| 1237h | (Reserved) | - | - | Inaccessible | - |
| 1238h | Jog frequency setting | A038 | R/W | "Start frequency" to 999 | 0.01 [Hz] |
| 1239h | Jog stop mode | A039 | R/W | 0 (free-running after jogging stops [disabled during operation])<br>1 (deceleration and stop after jogging stops [disabled during operation])<br>2 (DC braking after jogging stops [disabled during operation])<br>3 (free-running after jogging stops [enabled during operation])<br>4 (deceleration and stop after jogging stops [enabled during operation])<br>5 (DC braking after jogging stops [enabled during operation]) | - |
| 123Ah | (Reserved) | - | - | | - |
| 123Bh | Torque boost method selection | A041 | R/W | 0 (manual torque boost), 1 (automatic torque boost) | - |
| 123Ch | Manual torque boost value | A042 | R/W | 0 to 200 | 0.1 [%] |
| 123Dh | Manual torque boost frequency adjustment | A043 | R/W | 0 to 500 | 0.1 [%] |
| 123Eh | V/F characteristic curve selection, 1st motor | A044 | R/W | 0 (VC), 1 (VP), 2 (free V/f), 3 (sensorless vector control), 4 (0Hz-range sensorless vector), 5 (vector with sensor) | - |
| 123Fh | V/f gain setting | A045 | R/W | 20 to 100 | 1 [%] |
| 1240h | Voltage compensation gain setting for automatic torque boost, 1st motor | A046 | R/W | 0 to 255 | 1 [%] |
| 1241h | Slippage compensation gain setting for automatic torque boost, 1st motor | A047 | R/W | 0 to 255 | 1 [%] |
| 1242h to1244h | (Reserved) | - | - | Inaccessible | - |
| 1245h | DC braking enable | A051 | R/W | 0 (disabling), 1 (enabling), 2 (set frequency only) | - |
| 1246h | DC braking frequency setting | A052 | R/W | 0 to 40000 | 0.01 [Hz] |
| 1247h | DC braking wait time | A053 | R/W | 0 to 50 | 0.1 [sec.] |
| 1248h | DC braking force during deceleration | A054 | R/W | 0 to 100 | 1 [%] |
| 1249h | DC braking time for deceleration | A055 | R/W | 0 to 600 | 0.1 [sec.] |
| 124Ah | DC braking/edge or level detection for [DB] input | A056 | R/W | 0 (edge operation), 1 (level operation) | - |
| 124Bh | DC braking force for starting | A057 | R/W | 0 to 100 | 1 [%] |
| 124Ch | DC braking time for starting | A058 | R/W | 0 to 600 | 0.1 [sec.] |
| 124Dh | DC braking carrier frequency setting | A059 | R/W | 5 to 150 | 0.1 [kHz] |
| 124Eh | (Reserved) | - | - | Inaccessible | - |
| 124Fh | Frequency upper limit setting | A061 (high) | R/W | 0 or "maximum frequency limit" to "maximum frequency" | 0.01 [Hz] |
| 1250h | Frequency lower limit setting | A061 (low) | R/W | 0 or "maximum frequency limit" to "maximum frequency" | 0.01 [Hz] |
| 1251h | | A062 (high) | R/W | | |
| 1252h | Jump (center) frequency setting 1 | A062 (low) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1253h | | A063 (high) | R/W | | |
| 1254h | Jump (hysteresis) frequency width setting 1 | A063 (low) | R/W | 0 to 1000 | 0.01 [Hz] |
| 1255h | | A064 | R/W | | |
| 1256h | Jump (center) frequency setting 2 | A065 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1257h | Jump (hysteresis) frequency width setting 2 | A065 (low) | R/W | 0 to 1000 | 0.01 [Hz] |
| 1258h | | A066 | R/W | | |
| 1259h | Jump (center) frequency setting 3 | A067 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 125Ah | Jump (hysteresis) frequency width setting 3 | A067 (low) | R/W | 0 to 1000 | 0.01 [Hz] |
| 125Bh | | A068 | R/W | | |
| 125Ch | Acceleration stop frequency setting | A069 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 125Dh | Acceleration stop time frequency setting | A069 (low) | R/W | 0 to 600 | 0.1 [sec.] |
| 125Eh | | A070 | R/W | | |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 125Fh | PID Function Enable | A071 | R/W | 0 (disabling), 1 (enabling), 2 (enabling inverted-data output) | - |
| 1260h | PID proportional gain | A072 | R/W | 2 to 50 | 0.1 |
| 1261h | PID integral time constant | A073 | R/W | 0 to 36000 | 0.1 [sec.] |
| 1262h | PID derivative gain | A074 | R/W | 0 to 10000 | 0.01 [sec.] |
| 1263h | PV scale conversion | A075 | R/W | 1 to 9999 | 0.01 |
| 1264h | PV source setting | A076 | R/W | 0 (input via OI), 1 (input via O), 2 (external communication), 3 (pulse train frequency input), 10 (operation result output) | - |
| 1265h | Reverse PID | A077 | R/W | 00 (disabling), 01 (enabling) | - |
| 1266h | PID output limiter | A078 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1267h | PID feed forward selection | A079 | R/W | 0 (disabled), 1(O input), 2 (OI input), 3 (O2 input) | - |
| 1268h | (Reserved) | - | R/W | Inaccessible | - |
| 1269h | AVR function select | A081 | R/W | 0 (always on), 1 (always off), 2 (off during deceleration) | - |
| 126Ah | AVR voltage select | 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 | (Reserved) | - | R/W | Inaccessible | - |
| 126Ch | (Reserved) | - | R/W | Inaccessible | - |
| 126Dh | Operation mode selection | A085 | R/W | 0 (normal operation), 1 (energy-saving operation), 2 (fuzzy operation) | - |
| 126Eh | Energy saving mode tuning | A086 | R/W | 0 to 1000 | 0.1 [%] |
| 126Fh to 1273h | (Reserved) | - | - | Inaccessible | - |
| 1274h | Acceleration (2) time setting | A092 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 1275h | | A092 (low) | R/W | | |
| 1276h | Deceleration (2) time setting | A093 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 1277h | | A093 (low) | R/W | | |
| 1278h | Select method to switch to Acc2/Dec2 profile | A094 | R/W | 0 (switching by 2CH terminal), 1 (switching by setting) | - |
| 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 | 0 (linear), 1 (S curve), 2 (U curve), 3 (inverted-U curve), 4 (EL-S curve) | - |
| 127Eh | Deceleration curve setting | A098 | R/W | 0 (linear), 1 (S curve), 2 (U curve), 3 (inverted-U curve), 4 (EL-S curve) | - |
| 127Fh | (Reserved) | - | - | Inaccessible | - |
| 1280h | (Reserved) | - | - | Inaccessible | - |
| 1281h | [OI]-[L] input active range start frequency | A101 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1282h | | A101 (low) | R/W | | |
| 1283h | [OI]-[L] input active range end frequency | A102 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1284h | | A102 (low) | R/W | | |
| 1285h | [OI]-[L] input active range start current | A103 | R/W | 0 to "[OI]-[L] input active range end current" | 1 [%] |
| 1286h | [OI]-[L] input active range end current | A104 | R/W | "[OI]-[L] input active range start current" to 100 | 1 [%] |
| 1287h | [OI]-[L] input start frequency enable | A105 | R/W | 0 (external start frequency), 1 (0 Hz) | - |
| 1288h to 128Ch | (Reserved) | - | - | Inaccessible | - |
| 128Dh | [O2]-[L] input active range start frequency | A111 (high) | R/W | -40000 to 40000 | 0.01 [Hz] |
| 128Eh | | A111 (low) | R/W | | |
| 128Fh | [O2]-[L] input active range end frequency | A112 (high) | R/W | -40000 to 40000 | 0.01 [Hz] |
| 1290h | | A112 (low) | R/W | | |
| 1291h | [O2]-[L] input active range start voltage | A113 | R/W | -100 to "[O2]-[L] input active range end voltage" | 1 [%] |
| 1292h | [O2]-[L] input active range end voltage | A114 | R/W | "[O2]-[L] input active range start voltage" to 100 | 1 [%] |
| 1293h to 12A4h | (Reserved) | - | - | Inaccessible | - |
| 12A5h | Acceleration curve constants setting | A131 | R/W | 1 (smallest swelling) to 10 (largest swelling) | - |
| 12A6h | Deceleration curve constants setting | A132 | R/W | 1 (smallest swelling) to 10 (largest swelling) | - |
| 12A7h to 12AEh | (Reserved) | - | - | Inaccessible | - |
| 12AFh | Operation-target frequency | A141 | R/W | 0 (digital operator), 1 (keypad potentiometer), 2 (input | - |

| | selection 1 | | | via O), 3 (input via OI), 4 (external communication), 5 (option 1), 6 (option 2), 7 (pulse train frequency input) | |
|---|---|---|---|---|---|

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 12B0h | Operation-target frequency selection 2 | A142 | R/W | 0 (digital operator), 1 (keypad potentiometer), 2 (input via O), 3 (input via OI), 4 (external communication), 5 (option 1), 6 (option 2), 7 (pulse train frequency input) | - |
| 12B1h | Operator selection | A143 | R/W | 0 (addition: A141 + A142), 1 (subtraction: A141 - A142), 2 (multiplication: A141 x A142) | - |
| 12B2h | (Reserved) | - | - | Inaccessible | - |
| 12B3h | Frequency to be added | A145 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 12B4h | | A145 (low) | R/W | | |
| 12B5h | Sign of the frequency to be added | A146 | R/W | 00 (frequency command + A145), 01 (frequency command - A145) | - |
| 12B6h to 12B8h | (Reserved) | - | - | Inaccessible | - |
| 12B9h | EL-S-curve acceleration/deceleration ratio 1 | A150 | R/W | 0 to 50 | 1 [%] |
| 12BAh | EL-S-curve acceleration/deceleration ratio 2 | A151 | R/W | 0 to 50 | 1 [%] |
| 12BBh | EL-S-curve deceleration/deceleration ratio 1 | A152 | R/W | 0 to 50 | 1 [%] |
| 12BCh | EL-S-curve deceleration/deceleration ratio 2 | A153 | R/W | 0 to 50 | 1 [%] |
| 12BDh to 1300h | (Reserved) | - | - | Inaccessible | - |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1301h | Selection of restart mode | b001 | R/W | 0 (tripping), 1 (starting with 0 Hz), 2 (starting with matching frequency), 3 (tripping after deceleration and stopping with matching frequency), 4 (restarting with active matching frequency) | - |
| 1302h | Allowable under-voltage power failure time | b002 | R/W | 3 to 250 | 0.1 [sec.] |
| 1303h | Retry wait time before motor restart | b003 | R/W | 3 to 1000 | 0.1 [sec.] |
| 1304h | Instantaneous power failure/under-voltage trip alarm enable | b004 | R/W | 0 (disabling), 1 (enabling), 2 (disabling during stopping and decelerating to stop) | - |
| 1305h | Number of restarts on power failure/under-voltage trip events | b005 | R/W | 0 (16 times), 1 (unlimited) | - |
| 1306h | Phase loss detection enable | b006 | R/W | 0 (disabling), 1 (enabling) | - |
| 1307h | Restart frequency threshold | b007 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1308h | | b007 (low) | R/W | | |
| 1309h | Selection of retry after tripping | b008 | R/W | 0 (tripping), 1 (starting with 0 Hz), 2 (starting with matching frequency), 3 (tripping after deceleration and stopping with matching frequency), 4 (restarting with active matching frequency) | - |
| 130Ah | Selection of retry count after undervoltage | b009 | R/W | 0 (16 times), 1 (unlimited) | - |
| 130Bh | Selection of retry count after overvoltage or overcurrent | b010 | R/W | 1 to 3 | 1 [time] |
| 130Ch | Retry wait time after tripping | b011 | R/W | 3 to 1000 | 0.1 [sec.] |
| 130Dh | Electronic thermal setting (calculated within the inverter from current output) | b012 | R/W | 200 to 1000 | 0.1 [%] |
| 130Eh | Electronic thermal characteristic | b013 | R/W | 0 (reduced-torque characteristic), 1 (constant-torque characteristic), 2 (free setting) | - |
| 130Fh | (Reserved) | - | - | Inaccessible | - |
| 1310h | Free setting, electronic thermal frequency (1) | b015 | R/W | 0 to 400 | 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 400 | 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 restriction operation mode | b021 | R/W | 0 (disabling), 1 (enabling during acceleration and constant-speed operation), 2 (enabling during constant-speed operation), 3 (enabling during acceleration and constant-speed operation [speed increase at regeneration]) | - |
| 1317h | Overload restriction setting | b022 | R/W | 200 to 2000 | 0.1 [%] |
| 1318h | Deceleration rate at overload restriction | b023 | R/W | 10 to 3000 | 0.01 [sec.] |
| 1319h | Overload restriction operation mode (2) | b024 | R/W | 0 (disabling), 1 (enabling during acceleration and constant-speed operation), 2 (enabling during constant-speed operation), 3 (enabling during acceleration and constant-speed operation [speed increase at regeneration]) | - |
| 131Ah | Overload restriction setting (2) | b025 | R/W | 200 to 2000 | 0.1 [%] |
| 131Bh | Deceleration rate at overload restriction (2) | b026 | R/W | 10 to 3000 | 0.01 [sec.] |
| 131Ch | Overcurrent suppression enable | b027 | R/W | 0 (disabling), 1 (enabling) | - |
| 131Dh | Active frequency matching scan start frequency | b028 | R/W | 200 to 2000 | 0.1 [%] |
| 131Eh | Active frequency matching, scan-time constant | b029 | R/W | 10 to 3000 | 0.01 [sec.] |
| 131Fh | Active frequency matching, restart frequency select | b030 | R/W | 0 (frequency at the last shutoff), 1 (maximum frequency), 2 (set frequency) | - |
| 1320h | Software lock mode selection | b031 | R/W | 0 (disabling change of data other than "b031" when SFT is on), 1 (disabling change of data other than "b031" and frequency settings when SFT is on), 2 (disabling change of data other than "b031"), 3 (disabling change of data other than "b031" and frequency settings), 10 (enabling data changes during operation) | - |
| 1322h | (Reserved) | - | - | Inaccessible | - |
| 1323h | Run/power-on warning time | b034 (high) | R/W | 0 to 65535 | 1 [10h] |
| 1324h | | b034 (low) | R/W | | |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1326h | Reduced voltage start selection | b036 | R/W | 0 (minimum reduced voltage start time) to 255 (maximum reduced voltage start time) | - |
| 1327h | Function code display restriction | b037 | R/W | 0 (full display), 1 (function-specific display), 2 (user setting), 3 (data comparison display), 4 (basicdisplay) | - |
| 1328h | Initial-screen selection | b038 | R/W | 0 (screen displayed when the STR key was pressed last), 1 (d001), 2 (d002), 3 (d003), 4 (d007), 5 (F001) | - |
| 1329h | Automatic user-parameter setting function enable | b039 | R/W | 0 (disabling), 1 (enabling) | - |
| 132Ah | Torque limit selection | b040 | R/W | 00 (quadrant-specific setting), 01 (switching by terminal), 02 (analog input), 03 (option 1), 04 (option 2) | - |
| 132Bh | Torque limit (1) (forward-driving in 4-quadrant mode) | b041 | R/W | 0 to 200/255 (no) | 1 [%] |
| 132Ch | Torque limit (2) (reverse-regenerating in 4-quadrant mode) | b042 | R/W | 0 to 200/255 (no) | 1 [%] |
| 132Dh | Torque limit (3) (reverse-driving in 4-quadrant mode) | b043 | R/W | 0 to 200/255 (no) | 1 [%] |
| 132Eh | Torque limit (4) (forward-regenerating in 4-quadrant mode) | b044 | R/W | 0 to 200/255 (no) | 1 [%] |
| 132Fh | Torque limit LADSTOP enable | b045 | R/W | 0 (disabling), 1 (enabling) | - |
| 1330h | Reverse Run protection enable | b046 | R/W | 0 (disabling), 1 (enabling) | - |
| 1331h to 1333h | (Reserved) | - | - | Inaccessible | - |
| 1334h | Controller deceleration and stop on power loss | b050 | R/W | 0 (disabling), 1 (enabling), 2, (nonstop operation at momentary power failure (no restoration)) 3, (nonstop operation at momentary power failure (restoration to be done)) | - |
| 1335h | DC bus voltage trigger level during power loss | b051 | R/W | 0 to 10000 | 0.1 [V] |
| 1336h | Over-voltage threshold during power loss | b052 | R/W | 0 to 10000 | 0.1 [V] |
| 1337h | Deceleration time setting during power loss (target voltage level) | b053 (high) | R/W | 0 to 360000 | 0.01 [sec.] |
| 1338h | | b053 (low) | R/W | | |
| 1339h | Initial output frequency decrease during power loss | b054 | R/W | 0 to 1000 | 0.01 [Hz] |
| 133Ah | Proportional gain setting for nonstop operation at momentary power failure | b055 | R/W | 0 to 255 | 0.01 |
| 133Bh | Integral time setting for nonstop operation at momentary power failure | b056 | R/W | 0 to 65535 | 0.001 [sec] |
| 133Ch to 133Eh | (Reserved) | - | - | Inaccessible | - |
| 133Fh | Maximum-limit level of window comparators O | b060 | R/W | | |
| 1340h | Minimum-limit level of window comparators O | b061 | R/W | | |
| 1341h | Hysteresis width of window comparators O | b062 | R/W | | |
| 1342h | Maximum-limit level of window comparators OI | b063 | R/W | | |
| 1343h | Minimum-limit level of window comparators OI | b064 | R/W | | |
| 1344h | Hysteresis width of window comparators OI | b065 | R/W | | |
| 1345h | Maximum-limit level of window comparators OI | b066 | R/W | | |
| 1346h | Minimum-limit level of window comparators O/OI/O2 | b067 | R/W | | |
| 1347h | Hysteresis width of window comparators O/OI/O2 | b068 | R/W | | |
| 1348h | (Reserved) | - | - | Inaccessible | - |
| 1349h | Operation level at O disconnection | b070 | R/W | | |
| 134Ah | Operation level at OI disconnection | b071 | R/W | | |
| 134Bh | Operation level at O2 disconnection | b072 | R/W | | |
| 134Ch to 1350 | (reserved) | - | - | Inaccessible | |
| 1351h | Cumulative input power data clearance | b060 | R/W | Clearance by setting "1" | - |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1352h | Cumulative input power display gain setting | b060 | R/W | 1 to 1000 | 1 |
| 1354h | (Reserved) | - | - | Inaccessible | - |
| 1355h | Start frequency adjustment | b082 | R/W | 10 to 999 | 0.01 [Hz] |
| 1356h | Carrier frequency setting | b083 | R/W | 5 to 150 | 0.1 [kHz] |
| 1357h | Initialization mode (parameters or trip history) | b084 | R/W | 0 (clearing the trip history), 1 (initializing the data), 2 (clearing the trip history and initializing the data) | - |
| 1358h | Country code for initialization | b085 | R/W | 0 (Japan), 1 (EU), 2 (U.S.A.) | - |
| 1359h | Frequency scaling conversion factor | b086 | R/W | 1 to 999 | 0.1 |
| 135Ah | STOP key enable | b087 | R/W | 0 (enabling), 1 (disabling), 2 (disabling only stop) | - |
| 135Bh | Restart mode after FRS | b088 | R/W | 0 (starting with 0 Hz), 1 (starting with matching frequency), 2 (starting with active matching frequency) | - |
| 135Ch | (Reserved) | - | - | Inaccessible | - |
| 135Dh | Dynamic braking usage ratio | b090 | R/W | 0 to 1000 | 0.1 [%] |
| 135Eh | Stop mode selection | b091 | R/W | 0 (deceleration until stop), 1 (free-run stop) | - |
| 135Fh | Cooling fan control | b092 | R/W | 0 (always operating the fan), 1 (operating the fan only during inverter operation [including 5 minutes after power-on and power-off]) | - |
| 1360h | (Reserved) | - | - | Inaccessible | - |
| 1361h | (Reserved) | - | - | Inaccessible | - |
| 1362h | Dynamic braking control | b095 | R/W | 0 (disabling), 1 (enabling [disabling while the motor is stopped]), 2 (enabling [enabling also while the motor is stopped]) | - |
| 1363h | Dynamic braking activation level | b096 | R/W | 330 to 380, 660 to 760 | 1. [V] |
| 1364h | (Reserved) | - | - | Inaccessible | - |
| 1365h | Thermistor for thermal protection control | b098 | R/W | 0 (disabling the thermistor), 1 (enabling the thermistor with PTC), 2 (enabling the thermistor with NTC) | - |
| 1366h | Thermal protection level setting | b099 | R/W | 0. to 9999. | 1. [Ω] |
| 1367h | Free-setting V/f frequency (1) | b100 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 1368h | Free-setting V/f voltage (1) | b101 | R/W | 0. to 8000 | 0.1 [V] |
| 1369h | Free-setting V/f frequency (2) | b102 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 136Ah | Free-setting V/f voltage (2) | b103 | R/W | 0. to 8000 | 0.1 [V] |
| 136Bh | Free-setting V/f frequency (3) | b104 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 136Ch | Free-setting V/f voltage (3) | b105 | R/W | 0. to 8000 | 0.1 [V] |
| 136Dh | Free-setting V/f frequency (4) | b106 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 136Eh | Free-setting V/f voltage (4) | b107 | R/W | 0. to 8000 | 0.1 [V] |
| 136Fh | Free-setting V/f frequency (5) | b108 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 1370h | Free-setting V/f voltage (5) | b109 | R/W | 0. to 8000 | 0.1 [V] |
| 1371h | Free-setting V/f frequency (6) | b110 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 1372h | Free-setting V/f voltage (6) | b111 | R/W | 0. to 8000 | 0.1 [V] |
| 1373h | Free-setting V/f frequency (7) | b112 | R/W | 0. to "free-setting V/f frequency (2)" | 1 [Hz] |
| 1374h | Free-setting V/f voltage (7) | b113 | R/W | 0. to 8000 | 0.1 [V] |
| 1375h to 137Ah | (Reserved) | - | - | Inaccessible | - |
| 137Bh | Brake Control Enable | b120 | R/W | 0 (disabling), 1 (enabling) | - |
| 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 Setting | b125 | R/W | 0 to 40000 | 0.01 [Hz] |
| 1381h | Brake Release Current Setting | b126 | R/W | 0 to 2000 | 0.1 [%] |
| 1382h | Braking frequency | b127 | R/W | 0 to 40000 | 0.01 [Hz] |
| 1383h | (Reserved) | - | - | Inaccessible | - |
| 1384h | (Reserved) | - | - | Inaccessible | - |
| 1385h | Overvoltage suppression enable | b130 | R/W | 0 (disabling), 1 (enabling), 2 (enabling with acceleration) | - |
| 1386h | Overvoltage suppression level | b131 | R/W | 200 V class: 330 to 390 (V) 400 V class: 660 to 780 (V) | 1 [V] |
| 1387h | Acceleration and deceleration rate at overvoltage suppression | b132 | R/W | 10 to 3000 | 0.01 [sec.] |
| 1388h | Overvoltage suppression propotional gain | b133 | R/W | 0 to 255 | 0.01 |
| 1389h | Overvoltage suppression Integral time | b134 | R/W | 0 to 65535 | 0.001 [sec.] |
| 1390h to 1400h | (Reserved) | - | - | Inaccessible | - |

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1401h | Terminal [1] function | C001 | R/W | 1 (RV: Reverse RUN), 2 (CF1: Multispeed 1 setting), 3 (CF2: Multispeed 2 setting), 4 (CF3: Multispeed 3 setting), 5 (CF4: Multispeed 4 setting), 6 (JG: Jogging), 7 (DB: external DC braking), 8 (SET: Set 2nd motor data), 9 (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), 17 (SET3: 3rd motor control), 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), 26 (CAS: control gain setting), 27 (UP: remote control UP function), 28 (DWN: remote control DOWN function), 29 (DWN: 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), 43 (PPI: P/PI mode selection), 44 (BOK: braking confirmation), 45 (ORT: orientation), 46 (LAC: LAD cancellation), 47 (PCLR: clearance of position deviation), 48 (STAT: pulse train position command input enable), 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), 54 (SON: servo-on), 55 (FOC: forcing), 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), 63 (MI8: general-purpose input 8), 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), 71 (FOT: forward drive stop), 72 (ROT: reverse drive stop), 73 (SPD: speed / position switching), 74 (PCNT: pulse counter), 75 (PCC: pulse counter clear) 255 (no: no assignment) | - |
| 1402h | Terminal [2] function | C002 | R/W | | - |
| 1403h | Terminal [3] function | C003 | R/W | | - |
| 1404h | Terminal [4] function | C004 | R/W | | - |
| 1405h | Terminal [5] function | C005 | R/W | | - |
| 1406h | Terminal [6] function | C006 | R/W | | - |
| 1407h | Terminal [7] function | C007 | R/W | | - |
| 1408h | Terminal [8] function | C008 | R/W | | - |
| 1409h | (Reserved) | - | - | Inaccessible | - |
| 140Ah | (Reserved) | - | - | Inaccessible | - |
| 140Bh | Terminal [1] active state | C011 | R/W | 0 (NO), 1 (NC) | - |
| 140Ch | Terminal [2] active state | C012 | R/W | 0 (NO), 1 (NC) | - |
| 140Dh | Terminal [3] active state | C013 | R/W | 0 (NO), 1 (NC) | - |
| 140Eh | Terminal [4] active state | C014 | R/W | 0 (NO), 1 (NC) | - |
| 140Fh | Terminal [5] active state | C015 | R/W | 0 (NO), 1 (NC) | - |
| 1410h | Terminal [6] active state | C016 | R/W | 0 (NO), 1 (NC) | - |
| 1411h | Terminal [7] active state | C017 | R/W | 0 (NO), 1 (NC) | - |
| 1412h | Terminal [8] active state | C018 | R/W | 0 (NO), 1 (NC) | - |
| 1413h | Terminal [FW] active state | C019 | R/W | 0 (NO), 1 (NC) | - |
| 1414h | (Reserved) | - | - | Inaccessible | - |

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1415h | Terminal [11] function | C021 | R/W | 0 (RUN: running), 1 (FA1: constant-speed reached), 2 (FA2: set frequency overreached), 3 (OL: overload notice advance signal (1)), 4 (OD: output deviation for PID control), 5 (AL: alarm signal), 6 (FA3: set frequency reached), 7 (OTQ: over-torque), 8 (IP: instantaneous power failure), 9 (UV: | - |
| 1416h | Terminal [12] function | C022 | R/W | undervoltage), 10 (TRQ: torque limited), 11 (RNT: operation time over), 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 | - |
| 1417h | Terminal [13] function | C023 | R/W | 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), 36 (LOG4: logical operation result 4), 37 | - |
| 1418h | Terminal [14] function | C024 | R/W | (LOG5: logical operation result 5), 38 (LOG6: logical operation result 6), 39 (WAC: capacitor life warning), 40 (WAF: cooling-fan speed drop), 41 (FR: starting contact signal), 42 (OHF: heat sink overheat warning), 43 (LOC: low-current indication signal), 44 (M01: general-purpose | - |
| 1419h | Terminal [15] function | C025 | R/W | output 1), 45 (M02: general-purpose output 2), 46 (M03: general-purpose output 3), 47 (M04: general-purpose output 4), 48 (M05: general-purpose output 5), 49 (M06: general-purpose output 6), 50 (IRDY: inverter ready), 51 (FWR: forward rotation), 52 (RVR: reverse rotation), 53 (MJA: major failur) | - |
| 141Ah | Alarm relay terminal function | C026 | R/W | 54 (WCO: window comparator O), 55 (WCO: window comparator OI), 56 (WCO: window comparator O2) (When alarm code output is selected by "C062", functions "AC0" to "AC2" or "AC0" to "AC3" [ACn: alarm code output] are forcibly assigned to intelligent output terminals [11] to [13] or [11] to [14], respectively.) | - |
| 141Bh | [FM] signal selection | C027 | R/W | 0 (output frequency), 1 (output current), 2 (output torque), 3 (digital output frequency), 4 (output voltage), 5 (input power), 6 (electronic thermal overload), 7 (LAD frequency), 8 (digital current monitoring), 9 (motor temperature), 10 (heat sink temperature), 12 (general-purpose output YA0) | - |
| 141Ch | [AM] siginal selection | C028 | R/W | 0 (output frequency), 1 (output current), 2 (output torque), 4 (output voltage), 5 (input power), 6 (electronic thermal overload), 7 (LAD frequency), 9 (motor temperature), 10 (heat sink temperature), 11 (output torque [signed value]), 13 (general-purpose output YA1) | - |
| 141Dh | [AMI] siginal selection | C029 | R/W | 00 (output frequency), 01 (output current), 02 (output torque), 04 (output voltage), 05 (input power), 06 (electronic thermal overload), 07 (LAD frequency), 09 (motor temperature), 10 (heat sink temperature), 14 (general-purpose output YA2) | - |
| 141Eh | Digital current monitor reference value | C030 | R/W | 200 to 2000 | 0.1 [%] |
| 141Fh | Terminal [11] active state | C031 | R/W | 0 (NO), 1 (NC) | - |
| 1420h | Terminal [12] active state | C032 | R/W | 0 (NO), 1 (NC) | - |
| 1421h | Terminal [13] active state | C033 | R/W | 0 (NO), 1 (NC) | - |
| 1422h | Terminal [14] active state | C034 | R/W | 0 (NO), 1 (NC) | - |
| 1423h | Terminal [15] active state | C035 | R/W | 0 (NO), 1 (NC) | - |
| 1424h | Alarm relay active state | C036 | R/W | 0 (NO), 1 (NC) | - |
| 1425h | (Reserved) | - | - | Inaccessible | - |
| 1426h | Low-current indication signal output mode selection | C038 | R/W | 0 (output during acceleration/deceleration and constant-speed operation), 1 (output only during constant-speed operation) | - |
| 1427h | Low-current indication signal detection level | C039 | R/W | 0 to 2000 | 0.1 [%] |
| 1428h | Overload signal output mode | C040 | R/W | 00 (output during acceleration/deceleration and constant-speed operation), 01 (output only during constant-speed operation) | - |
| 1429h | Overload level setting | C041 | R/W | 0 to 2000 | 0.1 [%] |

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 142Ah | Frequency arrival setting for accel. | C042 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 142Bh | | C042 (low) | R/W | | |
| 142Ch | Frequency arrival setting for decel. | C043 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 142Dh | | C043 (low) | R/W | | |
| 142Eh | PID deviation level setting | C044 | R/W | 0 to 1000 | 0.1 [%] |
| 142Fh | Frequency arrival setting for acceleration (2) | C045 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1430h | | C045 (low) | R/W | | |
| 1431h | Frequency arrival setting for deceleration (2) | C046 (high) | R/W | 0 to 40000 | 0.01 [Hz] |
| 1432h | | C046 (low) | R/W | | |
| 1433h to 1437h | (Reserved) | - | - | Inaccessible | - |
| 1438h | Maximum PID feedback data | C052 | R/W | 0 to 1000 | 0.1 [%] |
| 1439h | Minimum PID feedback data | C053 | R/W | 0 to 1000 | 0.1 [%] |
| 143Ah | (Reserved) | | R/W | | - |
| 143Bh | Over-torque (forward-driving) level setting | C055 | R/W | 0 to 200 | 1 [%] |
| 143Ch | Over-torque (reverse regenerating) level setting | C056 | R/W | 0 to 200 | 1 [%] |
| 143Dh | Over-torque (reverse driving) level setting | C057 | R/W | 0 to 200 | 1 [%] |
| 143Eh | Over-torque (forward regenerating) level setting | C058 | R/W | 0 to 200 | 1 [%] |
| 143Fh | (Reserved) | - | - | Inaccessible | - |
| 1440h | (Reserved) | - | - | Inaccessible | - |
| 1441h | Electronic thermal warning level setting | C061 | R/W | 0 to 100 | 1 [%] |
| 1442h | Alarm code output | C062 | R/W | 0 (disabling alarm output), 1 (3 bits), 2 (4 bits) | - |
| 1443h | Zero speed detection level | C063 | R/W | 0 to 10000 | 0.01 [Hz] |
| 1444h | Heat sink overheat warning level | C064 | R/W | 0 to 200 | 1 [℃] |
| 1445h to 144Ah | (Reserved) | - | - | Inaccessible | - |
| 144Bh | Communication speed selection | C071 | R/W | 2 (loopback test), 3 (2,400 bps), 4 (4,800 bps), 5 (9,600 bps), 6 (19,200 bps) | - |
| 144Ch | Node allocation | C072 | R/W | 1. to 32. | - |
| 144Dh | Communication data length selection | C073 | R/W | 7 (7 bits), 8 (8 bits) | - |
| 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) | - |
| 1450h | Selection of the operation after communication error | C076 | R/W | 0 (tripping), 1 (tripping after decelerating and stopping the motor), 2 (ignoring errors), 3 (stopping the motor after free-running), 4 (decelerating and stopping the motor) | - |
| 1451h | Communication timeout limit | C077 | R/W | 0 to 9999 | 0.01 [sec.] |
| 1452h | Communication wait time | C078 | R/W | 0 to 1000 | 1 [msec.] |
| 1453h | Communication mode selection | C079 | R/W | 0 (ASCII), 1 (Modbus-RTU) | - |
| 1454h | (Reserved) | - | - | Inaccessible | - |
| 1455h | [O] input span calibration | C081 | R/W | 0 to 65530 | 1 |
| 1456h | [OI] input span calibration | C082 | R/W | 0 to 65530 | 1 |
| 1457h | [O2] input span calibration | C083 | R/W | 0 to 65530 | 1 |
| 1458h | (Reserved) | - | - | Inaccessible | - |
| 1459h | Thermistor input tuning | C085 | R/W | 0 to 10000 | 0.1 |
| 145Ah to 145Eh | (Reserved) | - | - | Inaccessible | - |
| 145Fh | Debug mode enable | C091 | R | 0/1 | - |
| 1460h to 1468h | (Reserved) | - | - | Inaccessible | - |
| 1469h | Up/Down memory mode selection | C101 | R/W | 0 (not storing the frequency data), 1 (storing the frequency data) | - |
| 146Ah | Reset mode selection | C102 | R/W | 0 (resetting the trip when RS is on), 1 (resetting the trip when RS is off), 2 (enabling resetting only upon tripping [resetting when RS is on]) | - |
| 146Bh | Restart mode after reset | C103 | R/W | 0 (starting with 0 Hz), 1 (starting with matching frequency), 2 (restarting with active matching frequency) | - |
| 146Ch | (Reserved) | - | - | Inaccessible | - |
| 146Dh | FM gain adjustment | C105 | R/W | 50 to 200 | 1 [%] |
| 146Eh | AM gain adjustment | C106 | R/W | 50 to 200 | 1 [%] |
| 146Fh | AMI gain adjustment | C107 | R/W | 50 to 200 | 1 [%] |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1470h | (Reserved) | | R/W | | - |
| 1471h | AM bias adjustment | C109 | R/W | 0 to 100 | 1 [%] |
| 1472h | AMI bias adjustment | C110 | R/W | 0 to 100 | 1 [%] |
| 1473h | Overload setting (2) | C111 | R/W | 0 to 2000 | 0.1 [%] |
| 1474h to 147Ch | (Reserved) | - | - | Inaccessible | - |
| 147Dh | [O] input zero calibration | C121 | R/W | 0 to 65530 | 1 |
| 147Eh | [OI] input zero calibration | C122 | R/W | 0 to 65530 | 1 |
| 147Fh | [O2] input zero calibration | C123 | R/W | 0 to 65530 | 1 |
| 1480h to 1485h | (Reserved) | - | - | Inaccessible | - |
| 1486h | Output 11 on-delay time | C130 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1487h | Output 11 off-delay time | C131 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1488h | Output 12 on-delay time | C132 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1489h | Output 12 off-delay time | C133 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Ah | Output 13 on-delay time | C134 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Bh | Output 13 off-delay time | C135 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Ch | Output 14 on-delay time | C136 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Dh | Output 14 off-delay time | C137 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Eh | Output 15 on-delay time | C138 | R/W | 0 to 1000 | 0.1 [sec.] |
| 148Fh | Output 15 off-delay time | C139 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1490h | Output RY on-delay time | C140 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1491h | Output RY off-delay time | C141 | R/W | 0 to 1000 | 0.1 [sec.] |
| 1492h | Logical output signal 1 selection 1 | C142 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 1493h | Logical output signal 1 selection 2 | C143 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 1494h | Logical output signal 1 operator selection | C144 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 1495h | Logical output signal 2 selection 1 | C145 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 1496h | Logical output signal 2 selection 2 | C146 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 1497h | Logical output signal 2 operator selection | C147 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 1498h | Logical output signal 3 selection 1 | C148 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 1499h | Logical output signal 3 selection 2 | C149 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 149Ah | Logical output signal 3 operator selection | C150 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 149Bh | Logical output signal 4 selection 1 | C151 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 149Ch | Logical output signal 4 selection 2 | C152 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 149Dh | Logical output signal 4 operator selection | C153 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 149Eh | Logical output signal 5 selection 1 | C154 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 149Fh | Logical output signal 5 selection 2 | C155 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 14A0h | Logical output signal 5 operator selection | C156 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 14A1h | Logical output signal 6 selection 1 | C157 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 14A2h | Logical output signal 6 selection 2 | C158 | R/W | Same as the settings of C021 to C026 (except those of LOG1 to LOG6) | - |
| 14A3h | Logical output signal 6 operator selection | C159 | R/W | 0 (AND), 1 (OR), 2 (XOR) | - |
| 14A4h | Response time of intelligent input terminal 1 | C160 | R/W | 0 to 200 | |
| 14A5h | Response time of intelligent input terminal 2 | C161 | R/W | 0 to 200 | |
| 14A6h | Response time of intelligent input terminal 3 | C162 | R/W | 0 to 200 | |
| 14A7h | Response time of intelligent input terminal 4 | C163 | R/W | 0 to 200 | |
| 14A8h | Response time of intelligent input terminal 5 | C164 | R/W | 0 to 200 | |
| 14A9h | Response time of intelligent input terminal 6 | C165 | R/W | 0 to 200 | |
| 14AAh | Response time of intelligent input terminal 7 | C166 | R/W | 0 to 200 | |
| 14ABh | Response time of intelligent input terminal 8 | C167 | R/W | 0 to 200 | |
| 14ACh | Response time of intelligent input terminal FW | C168 | R/W | 0 to 200 | |
| 14ADh | Multistage speed/position determination time | C169 | R/W | 0 to 200 | |
| 14A4h to 1500h | (Reserved) | - | - | Inaccessible | - |

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1501h | Auto-tuning Setting | H001 | R/W | 0 (disabling auto-tuning), 1 (auto-tuning without rotation), 2 (auto-tuning with rotation) | - |
| 1502h | Motor data selection, 1st motor | H002 | R/W | 0 (Hitachi standard data), 1 (auto-tuned data), 2 (auto-tuned data [with online auto-tuning function]) | - |
| 1503h | Motor capacity, 1st motor | H003 | R/W | (*1) | - |
| 1504h | Motor poles setting, 1st motor | H004 | R/W | 0 (2 poles), 1 (4 poles), 2 (6 poles), 3 (8 poles), 4 (10 poles) | - |
| 1505h | Motor speed constant, 1st motor | H005 (high) | R/W | 0 to 80000 | 0.001 |
| 1506h | | H005 (low) | R/W | | |
| 1507h | Motor stabilization constant, 1st motor | H006 | R/W | 0 to 255 | 1 |
| 1508h to 1514h | (Reserved) | - | - | Inaccessible | - |
| 1515h | Motor constant R1, 1st motor | H020 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 1516h | | H020 (low) | R/W | | |
| 1517h | Motor constant R2, 1st motor | H021 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 1518h | | H021 (low) | R/W | | |
| 1519h | Motor constant L, 1st motor | H022 (high) | R/W | 1 to 65530 | 0.01 [mH] |
| 151Ah | | H022 (low) | R/W | | |
| 151Bh | Motor constant Io | H023 (high) | R/W | 1 to 65530 | 0.01 [A] |
| 151Ch | | H023 (low) | R/W | | |
| 151Dh | Motor constant J | H024 (high) | R/W | 1 to 9999000 | 0.001 |
| 151Eh | | H024 (low) | R/W | | |
| 151Fh to 1523h | (Reserved) | - | - | Inaccessible | - |
| 1524h | Auto constant R1, 1st motor | H030 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 1525h | | H030 (low) | R/W | | |
| 1526h | Auto constant R2, 1st motor | H031 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 1527h | | H031 (low) | R/W | | |
| 1528h | Auto constant L, 1st motor | H032 (high) | R/W | 1 to 65530 | 0.01 [mH] |
| 1529h | | H032 (low) | R/W | | |
| 152Ah | Auto constant Io, 1st motor | H033 (high) | R/W | 1 to 65530 | 0.01 [A] |
| 152Bh | | H033 (low) | R/W | | |
| 152Ch | Auto constant J, 1st motor | H034 (high) | R/W | 1 to 9999000 | 0.001 |
| 152Dh | | H034 (low) | R/W | | |
| 152Eh to 153Ch | (Reserved) | - | - | Inaccessible | - |
| 153Dh | PI proportional gain for 1st motor | H050 | R/W | 0 to 10000 | 0.1 [%] |
| 153Eh | PI integral gain for 1st motor | H051 | R/W | 0 to 10000 | 0.1 [%] |
| 153Fh | P proportional gain setting for 1st motor | H052 | R/W | 0 to 1000 | 0.01 |
| 1540h to 1546h | (Reserved) | - | - | Inaccessible | - |
| 1547h | Zero LV lmit for 1st motor | H060 | R/W | 0 to 1000 | 0.1 [%] |
| 1548h | Zero LV starting boost current for 1st motor | H061 | R/W | 0 to 50 | 1 [%] |
| 1549h to 1550h | (Reserved) | - | - | Inaccessible | - |
| 1551h | Terminal selection PI proportional gain setting | H070 | R/W | 0 to 10000 | 0.1 [%] |
| 1552h | Terminal selection PI integral gain setting | H071 | R/W | 0 to 10000 | 0.1 [%] |
| 1553h | Terminal selection P proportional gain setting | H072 | R/W | 0 to 1000 | 0.01 |
| 1554h | Gain switching time | H073 | R/W | 0 to 9999 | 1 [msec.] |
| 1555h to 1600h | (Reserved) | - | - | Inaccessible | - |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1601h | Operation mode on expansion card 1 error | P001 | R/W | 0 (tripping), 1 (continuing operation) | - |
| 1602h | Operation mode on expansion card 2 error | P002 | R/W | 0 (tripping), 1 (continuing operation) | - |
| 1603h to 160Ah | (Reserved) | - | - | Inaccessible | - |
| 160Bh | Encoder pulse-per-revolution (PPR) setting | P011 | R/W | 128 to 65000 | 1 |
| 160Ch | Control pulse setting | P012 | R/W | 0 (ASR), 1 (APR) | - |
| 160Dh | Pulse train mode setting | P013 | R/W | 0 (mode 0), 1 (mode 1), 2 (mode 2) | - |
| 160Eh | Home search stop position setting | P014 | R/W | 0 to 4095 | 1 |
| 160Fh | Home search speed setting | P015 | R/W | "start frequency" to "maximum frequency " (up to 12000) | 0.01 [Hz] |
| 1610h | Home search direction setting | P016 | R/W | 0 (forward), 1 (reverse) | - |
| 1611h | Home search completion range setting | P017 | R/W | 0 to 10000 | 1 |
| 1612h | Home search completion delay time setting | P018 | R/W | 0 to 999 | 0.01 [sec.] |
| 1613h | Electronic gear set position selection | P019 | R/W | 0 (feedback side), 1 (commanding side) | - |
| 1614h | Electronic gear ratio numerator setting | P020 | R/W | 1 to 9999 | - |
| 1615h | Electronic gear ratio denominator setting | P021 | R/W | 1 to 9999 | - |
| 1616h | Feed-forward gain setting | P022 | R/W | 0 to 65535 | 0.01 |
| 1617h | Position loop gain setting | P023 | R/W | 0 to 10000 | 0.01 |
| 1618h | Position bias setting | P024 | - | -2048 to 2048 | 1 |
| 1619h | Temperature compensation thermistor enable | P025 | R/W | 00 (no compensation), 01 (compensation) | - |
| 161Ah | Over-speed error detection level setting | P026 | R/W | 0 to 1500 | 0.1 [%] |
| 161Bh | Speed deviation error detection level setting | P027 | R/W | 0 to 12000 | 0.01 [Hz] |
| 161Ch | Numerator of the motor gear ratio | P028 | R/W | 1 to 9999 | 1 |
| 161Dh | Denominator of the motor gear ratio | P029 | R/W | 1 to 9999 | 1 |
| 161Eh | (Reserved) | - | - | Inaccessible | - |
| 161Fh | Accel/decel time input selection | P031 | R/W | 0 (digital operator), 1 (option 1), 2 (option 2), 3 (easy sequence) | - |
| 1620h | Positioning command input selection | P032 | R/W | 0 (digital operator), 1 (option 1), 2 (option 2) | - |
| 1621h | Torque command input selection | P033 | R/W | 0 (O terminal), 1 (OI terminal), 2 (O2 terminal), 3 (digital operator) | - |
| 1622h | Torque command setting | P034 | R/W | 0 to 200 | 1 [%] |
| 1623h | Polarity selection at the torque command input via O2 terminal | P035 | R/W | 0 (as indicated by the sign), 1 (depending on the operation direction) | - |
| 1624h | Torque bias mode | P036 | R/W | 0 (disabling the mode), 1 (digital operator), 2 (input via O2 terminal) | - |
| 1625h | Torque bias value | P037 | R/W | -200 to +200 | 1 [%] |
| 1626h | Torque bias polarity selection | P038 | R/W | 0 (as indicated by the sign), 1 (depending on the operation direction) | - |
| 1627h | Speed limit for torque-controlled operation (forward rotation) | P039 (high) | R/W | 0 to "maximum frequency " | 0.01 [Hz] |
| 1628h | | P039 (low) | R/W | | |
| 1629h | Speed limit for torque-controlled operation (reverse rotation) | P040 (high) | R/W | 0 to "maximum frequency " | 0.01 [Hz] |
| 162Ah | | P040 (low) | R/W | | |
| 162Bh | (Reserved) | - | - | Inaccessible | - |
| 162Ch | (Reserved) | - | - | Inaccessible | - |
| 162Dh | (Reserved) | - | - | Inaccessible | - |
| 162Eh | DeviceNet comm watchdog timer | P044 | R/W | 0 to 9999 | 0.01 [sec.] |
| 162Fh | Inverter action on DeviceNet comm error | P045 | R/W | 0 (tripping), 1 (tripping after decelerating and stopping the motor), 2 (ignoring errors), 3 (stopping the motor after free-running), 4 (decelerating and stopping the motor) | - |
| 1630h | DeviceNet polled I/O: Output instance number | P046 | R/W | 20, 21, 100 | - |
| 1631h | DeviceNet polled I/O: Input instance number | P047 | R/W | 70, 71, 101 | - |
| 1632h | Inverter action on DeviceNet idle mode | P048 | R/W | 0 (tripping), 1 (tripping after decelerating and stopping the motor), 2 (ignoring errors), 3 (stopping the motor after free-running), 4 (decelerating and stopping the motor) | - |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1633h | Motor poles setting for RPM | P049 | R/W | 0 (0 pole), 1 (2 poles), 2 (4 poles), 3 (6 poles), 4 (8 poles), 5 (10 poles), 6 (12 poles), 7 (14 poles), 8 (16 poles), 9 (18 poles), 10 (20 poles), 11 (22 poles), 12 (24 poles), 13 (26 poles), 14 (28 poles), 15 (30 poles), 16 (32 poles), 17 (34 poles), 18 (36 poles), 19 (38 poles) | - |
| 1634h to 1638h | (Reserved) | - | - | Inaccessible | - |
| 1639h | Pulse train frequency scale | P055 | R/W | 10 to 500 (input frequency corresponding to the allowable maximum frequency) | 0.1 [kHz] |
| 163Ah | Time constant of pulse train frequency filter | P056 | R/W | 1 to 200 | 0.01 [sec.] |
| 163Bh | Pulse train frequency bias | P057 | R/W | -100 to +100 | 1 [%] |
| 163Ch | Pulse train frequency limit | P058 | R/W | 0 to 100 | 1 [%] |
| 163Dh | (Reserved) | - | - | Inaccessible | - |
| 163Eh | Multistage position setting 0 | P060(HIGH) | R/W | | 1 |
| 163Fh | | P060(LOW) | R/W | | |
| 1640h | Multistage position setting 1 | P061(HIGH) | R/W | | 1 |
| 1641h | | P061(LOW) | R/W | | |
| 1642h | Multistage position setting 2 | P062(HIGH) | R/W | | 1 |
| 1643h | | P062(LOW) | R/W | | |
| 1644h | Multistage position setting 3 | P063(HIGH) | R/W | | 1 |
| 1645h | | P063(LOW) | R/W | | |
| 1646h | Multistage position setting 4 | P064(HIGH) | R/W | | 1 |
| 1647h | | P064(LOW) | R/W | | |
| 1648h | Multistage position setting 5 | P065(HIGH) | R/W | | 1 |
| 1649h | | P065(LOW) | R/W | | |
| 164Ah | Multistage position setting 6 | P066(HIGH) | R/W | | 1 |
| 164Bh | | P066(LOW) | R/W | | |
| 164Ch | Multistage position setting 7 | P067(HIGH) | R/W | | 1 |
| 164Dh | | P067(LOW) | R/W | | |
| 164Eh | Zero-return mode selection | P068 | R/W | 0(Low) / 1(High1) / 2(High2) | |
| 164Fh | Zero-return direction selection | P069 | R/W | 0(FW) / 1(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 536870912 (when P012 = 2) / | 1 |
| 1653h | | P072(LOW) | R/W | 0 to 2147483647 (when P012 = 3) | |
| 1654h | Position range specification (reverse) | P073(HIGH) | R/W | -536870912 to 0 (when P012 = 2) / | 1 |
| 1655h | | P073(LOW) | R/W | -2147483647 to 0 (when P012 = 3) | |
| 1656h to 1665h | (Reserved) | - | - | Inaccessible | - |
| 1666h | Easy sequence user parameter U (00) | P100 | R/W | 0 to 65530 | 1 |
| 1667h | Easy sequence user parameter U (01) | P101 | R/W | 0 to65530 | 1 |
| 1668h | Easy sequence user parameter U (02) | P102 | R/W | 0 to 65530 | 1 |
| 1669h | Easy sequence user parameter U (03) | P103 | R/W | 0 to 65530 | 1 |
| 166Ah | Easy sequence user parameter U (04) | P104 | R/W | 0 to 65530 | 1 |
| 166Bh | Easy sequence user parameter U (05) | P105 | R/W | 0 to 65530 | 1 |
| 166Ch | Easy sequence user parameter U (06) | P106 | R/W | 0 to 65530 | 1 |
| 166Dh | Easy sequence user parameter U (07) | P107 | R/W | 0 to 65530 | 1 |
| 166Eh | Easy sequence user parameter U (08) | P108 | R/W | 0 to 65530 | 1 |
| 166Fh | Easy sequence user parameter U (09) | P109 | R/W | 0 to 65530 | 1 |
| 1670h | Easy sequence user parameter U (10) | P110 | R/W | 0 to 65530 | 1 |
| 1671h | Easy sequence user parameter U (11) | P111 | R/W | 0 to 65530 | 1 |
| 1672h | Easy sequence user parameter U (12) | P112 | R/W | 0 to 65530 | 1 |
| 1673h | Easy sequence user parameter U (13) | P113 | R/W | 0 to 65530 | 1 |
| 1674h | Easy sequence user parameter U (14) | P114 | R/W | 0 to 65530 | 1 |
| 1675h | Easy sequence user parameter U (15) | P115 | R/W | 0 to 65530 | 1 |
| 1676h | Easy sequence user parameter U (16) | P116 | R/W | 0 to 65530 | 1 |
| 1677h | Easy sequence user parameter U (17) | P117 | R/W | 0 to 65530 | 1 |
| 1678h | Easy sequence user parameter U (18) | P118 | R/W | 0 to 65530 | 1 |
| 1679h | Easy sequence user parameter U (19) | P119 | R/W | 0 to 65530 | 1 |
| 167Ah | Easy sequence user parameter U (20) | P120 | R/W | 0 to 65530 | 1 |
| 167Bh | Easy sequence user parameter U (21) | P121 | R/W | 0 to 65530 | 1 |
| 167Ch | Easy sequence user parameter U (22) | P122 | R/W | 0 to 65530 | 1 |
| 167Dh | Easy sequence user parameter U (23) | P123 | R/W | 0 to 65530 | 1 |
| 167Eh | Easy sequence user parameter U (24) | P124 | R/W | 0 to 65530 | 1 |
| 167Fh | Easy sequence user parameter U (25) | P125 | R/W | 0 to 65530 | 1 |

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 1681h | Easy sequence user parameter U (27) | P127 | R/W | 0 to 65530 | 1 |
| 1682h | Easy sequence user parameter U (28) | P128 | R/W | 0 to 65530 | 1 |
| 1683h | Easy sequence user parameter U (29) | P129 | R/W | 0 to 65530 | 1 |
| 1684h | Easy sequence user parameter U (30) | P130 | R/W | 0 to 65530 | 1 |
| 1685h | Easy sequence user parameter U (31) | P131 | R/W | 0 to 65530 | 1 |
| 1686h to 2102h | (Reserved) | - | - | Inaccessible | - |

*1 The following table lists the code data for parameter "H003" (motor capacity selection):

| Code data | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Japan or U.S.A. mode (b085 = 00 or 02) | 0.2 kW | - | 0.4 | - | 0.75 | - | 1.5 | 2.2 | - | 3.7 | - |
| EU mode (b085 = 01) | 0.2 kW | 0.37 | - | 0.55 | 0.75 | 1.1 | 1.5 | 2.2 | 3.0 | - | 4.0 |
| Code data | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Japan or U.S.A. mode (b085 = 00 or 02) | 5.5 kW | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| EU mode (b085 = 01) | 5.5 kW | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |

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

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 2103h | Acceleration (1) time setting, 2nd motor | F202 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 2104h | | F202 (low) | R/W | | |
| 2105h | Deceleration time, 2nd motor | F203 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 2106h | | F203 (low) | R/W | | |
| 2107h to 2202h | (Reserved) | - | - | 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 | Register No. |
|---|---|---|---|---|---|
| 2203h | Base frequency setting, 2nd motor | A203 | R/W | 30 to "maximum frequency, 2nd motor" | 1 [Hz] |
| 2204h | Maximum frequency setting, 2nd motor | A204 | R/W | 30 to 400 | 1 [Hz] |
| 2205h to 2215h | (Reserved) | - | - | Inaccessible | - |
| 2216h | Multispeed frequency setting, 2nd motor | 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 | Torque boost method selection, 2nd motor | A241 | R/W | 0 (manual torque boost), 1 (automatic torque boost) | - |
| 223Ch | Manual torque boost value, 2nd motor | A242 | R/W | 0 to 200 | 0.1 [%] |
| 223Dh | Manual torque boost frequency adjustment, 2nd motor | A243 | R/W | 0 to 500 | 0.1 [%] |
| 223Eh | V/F characteristic curve selection, 2nd motor | A244 | R/W | 0 (VC), 1 (VP), 2 (free V/f), 3 (sensorless vector control), 4 (0Hz-range sensorless vector) | - |
| 223Fh | (Reserved) | - | - | Inaccessible | - |
| 2240h | Voltage compensation gain setting for automatic torque boost, 2nd motor | A246 | R/W | 0 to 255 | 1 |
| 2241h | Slippage compensation gain setting for automatic torque boost, 2nd motor | A247 | R/W | 0 to 255 | 1 |
| 2242h to 224Eh | (Reserved) | - | - | Inaccessible | - |
| 224Fh | Frequency upper limit setting, 2nd motor | A261 (high) | R/W | 00 or "2nd minimum frequency limit" to "maximum frequency, 2nd motor" | 0.01 [Hz] |
| 2250h | | A261 (low) | R/W | | |
| 2251h | Frequency lower limit setting, 2nd motor | A262 (high) | R/W | 00 or "start frequency" to "maximum frequency, 2nd motor limit" | 0.01 [Hz] |
| 2252h | | A262 (low) | R/W | | |
| 2253h to 226Eh | (Reserved) | - | - | Inaccessible | - |
| 226Fh | Acceleration (2) time setting, 2nd motor | A292 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 2270h | | A292 (low) | R/W | | |
| 2271h | Deceleration (2) time setting, 2nd motor | A293 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 2272h | | A293 (low) | R/W | | |
| 2273h | Select method to switch to Acc2/Dec2, 2nd motor | A294 | R/W | 0 (switching by 2CH terminal), 1 (switching by setting), 2 (switching only when the rotation is 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) | - | - | Inaccessible | - |

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| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 230Ch | Electronic thermal setting (calculated within the inverter from current output), 2nd motor | b212 | R/W | 200 to 1000 | 0.1 [%] |
| 230Dh | Electronic thermal characteristic, 2nd motor | b213 | R/W | 0 (reduced-torque characteristic), 1 (constant-torque characteristic), 2 (free setting) | - |
| 230Eh to 2501h | (Reserved) | - | - | Inaccessible | - |
| 2502h | Motor data selection, 2nd motor | H202 | R/W | 0 (Hitachi standard data), 1 (auto-tuned data), 2 (auto-tuned data [with online auto-tuning function]) | 0.1 [%] |
| 2503h | Motor capacity, 2nd motor | H203 | R/W | (*1) | - |
| 2504h | Motor poles setting, 2nd motor | H204 | R/W | 0 (2 poles), 1 (4 poles), 2 (6 poles), 3 (8 poles), 4 (10 poles) | - |
| 2505h | Motor speed constant, 2nd motor | H205 (high) | R/W | 1 to 80000 | 0.001 |
| 2506h | | H205 (low) | R/W | | |
| 2507h | Motor stabilization constant, 2nd motor | H206 | R/W | 0 to 255 | 1 |
| 2508h to 2514h | (Reserved) | - | - | Inaccessible | - |
| 2515h | Motor constant R1, 2nd motor | H220 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 2516h | | H220 (low) | R/W | | |
| 2517h | Motor constant R2, 2nd motor | H221 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 2518h | | H221 (low) | R/W | | |
| 2519h | Motor constant L, 2nd motor | H222 (high) | R/W | 1 to 65530 | 0.01 [mH] |
| 251Ah | | H222 (low) | R/W | | |
| 251Bh | Motor constant Io, 2nd motor | H223 (high) | R/W | 1 to 65530 | 0.01 [A] |
| 251Ch | | H223 (low) | R/W | | |
| 251Dh | Motor constant J, 2nd motor | H224 (high) | R/W | 1 to 9999000 | 0.001 |
| 251Eh | | H224 (low) | R/W | | |
| 251Fh to 2523h | (Reserved) | - | - | Inaccessible | - |
| 2524h | Auto constant R1, 2nd motor | H230 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 2525h | | H230 (low) | R/W | | |
| 2526h | Auto constant R2, 2nd motor | H231 (high) | R/W | 1 to 65530 | 0.001 [Ω] |
| 2527h | | H231 (low) | R/W | | |
| 2528h | Auto constant L, 2nd motor | H232 (high) | R/W | 1 to 65530 | 0.01 [mH] |
| 2529h | | H232 (low) | R/W | | |
| 252Ah | Auto constant Io, 2nd motor | H233 (high) | R/W | 1 to 65530 | 0.01 [A] |
| 252Bh | | H233 (low) | R/W | | |
| 252Ch | Auto constant J, 2nd motor | H234 (high) | R/W | 1 to 9999000 | 0.001 |
| 252Dh | | H234 (low) | R/W | | |
| 252Eh to 253Ch | (Reserved) | - | - | Inaccessible | - |
| 253Dh | PI proportional gain for 2nd motor | H250 | R/W | 0 to 10000 | 0.1 [%] |
| 253Eh | PI integral gain for 2nd motor | H251 | R/W | 0 to 10000 | 0.1 [%] |
| 253Fh | P proportional gain setting for 2nd motor | H252 | R/W | 0 to 1000 | 0.01 |
| 2540h to 2546h | (Reserved) | - | - | Inaccessible | - |
| 2547h | Zero LV lmit for 2nd motor | H260 | R/W | 0 to 1000 | 0.1 [%] |
| 2548h | Zero LV starting boost current for 2nd motor | H261 | R/W | 0 to 50 | 1 [%] |
| 2549h to 3102h | (Reserved) | - | - | Inaccessible | - |

*1 The following table lists the code data for parameter "H203" (motor capacity selection):

| Code data | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Japan or U.S.A. mode (b085 = 00 or 02) | 0.2 kW | - | 0.4 | - | 0.75 | - | 1.5 | 2.2 | - | 3.7 | - |
| EU mode (b085 = 01) | 0.2 kW | 0.37 | - | 0.55 | 0.75 | 1.1 | 1.5 | 2.2 | 3.0 | - | 4.0 |
| Code data | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Japan or U.S.A. mode (b085 = 00 or 02) | 5.5 kW | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| EU mode (b085 = 01) | 5.5 kW | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |

## (viii) List of registers (3rd control settings)

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 3103h | Acceleration (1) time setting, 3rd motor | F302 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 3104h | | F302 (low) | R/W | | |
| 3105h | Deceleration (1) time setting, 3rd motor | F303 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 3106h | | F303 (low) | R/W | | |
| 3107h to 3202h | (Reserved) | - | - | Inaccessible | - |

## (ix) List of registers (3rd control setting)

| Register No. | Function name | Function code | R/W | Monitoring and setting items Data resolution | Register No. |
|---|---|---|---|---|---|
| 3203h | Base frequency setting, 3rd motor | A303 | R/W | 30 to "maximum frequency, 3rd motor" | 1 [Hz] |
| 3204h | Maximum frequency setting, 3rd motor | A304 | R/W | 30 to 400 | 1 [Hz] |
| 3205h to 3215h | (Reserved) | - | - | Inaccessible | - |
| 3216h | Multispeed frequency setting, 3rd motor | A320 (high) | R/W | 0 or "start frequency" to "maximum frequency, 3rd motor" | 0.01 [Hz] |
| 3217h | | A320 (low) | R/W | | |
| 3218h to 323Bh | (Reserved) | - | - | Inaccessible | - |
| 323Ch | Manual torque boost value, 3rd motor | A342 | R/W | 0 to 200 | 0.1 [%] |
| 323Dh | Manual torque boost frequency adjustment, 3rd motor | A343 | R/W | 0 to 500 | 0.1 [%] |
| 323Eh | V/F characteristic curve selection, 3rd motor | A344 | R/W | 0 (VC), 1(VP) | - |
| 323Fh to 326Ch | (Reserved) | - | - | Inaccessible | - |
| 326Dh | Acceleration (2) time setting, 3rd motor | A392 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 326Eh | | A392 (low) | R/W | | |
| 326Fh | Deceleration (2) time setting, 3rd motor | A393 (high) | R/W | 1 to 360000 | 0.01 [sec.] |
| 3270h | | A393 (low) | R/W | | |
| 3271h to 330B | (Reserved) | - | - | Inaccessible | - |
| 330Ch | Electronic thermal setting (calculated within the inverter from current output), 3rd motor | b312 | R/W | 200 to 1000 | 0.1 [%] |
| 330Dh | Electronic thermal characteristic, 3rd motor | b313 | R/W | 0 (reduced-torque characteristic), 1 (constant-torque characteristic), 2 (free setting) | - |
| 330Eh to 3506h | (Reserved) | - | - | Inaccessible | - |
| 3507h | Motor stabilization constant, 3rd motor | H306 | R/W | 0 to 255 | 1 |
| 3508h to | (Reserved) | - | - | Inaccessible | - |