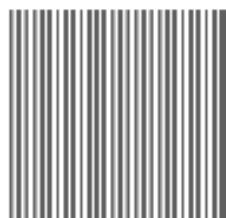


**CHINO**

**KR2000 SERIES  
GRAPHIC RECORDER  
COMMUNICATIONS  
INTERFACES**



**INSTRUCTIONS**

Retain this manual apart from the instrument  
and in an easily accessible place.

Please make sure that this manual is handed to the final user of the instrument.

한국 CHINO 주식회사

# Contents

<b>Introduction</b>	1
<b>1 General</b>	2
1.1 RS-232C communications interface	2
1.2 RS-485 communications interface	2
1.3 Ethernet	2
1.4 MODBUS protocol	2
<b>2 Communications specifications</b>	3
2.1 Serial communications	3
2.2 Ethernet communications	3
<b>3 Confirmation of communications specifications and settings</b>	6
3.1 Switch settings	6
3.2 Settings from this unit	6
<b>4 Connections</b>	8
4.1 Connection precautions	8
4.2 Communications cables	10
4.3 RS-232C connections	11
4.4 RS-485 connections	12
<b>5 MODBUS protocol</b>	13
5.1 Transmission mode of message	14
5.2 Data time interval	15
5.3 Message configuration	15
5.4 Message creation	21
5.5 Function code	22
5.6 Process in abnormality	27
5.7 Reference table	29
5.8 Range number table	79

# Introduction

This manual describes the specifications and operation of three communications interfaces (RS-232C, RS-485 and Ethernet) of the KR2000 series graphic recorders.

The individual part for each communication is explained separately in [In case of RS-232C], [In case of RS-485] and [in case of Ethernet], and the common part is explained all together. Please read the required part carefully. Be sure to confirm the model code of the communications interface of this unit you purchased.

K R 2 1□□-□□□



Communications interface (option)

N: None

R: Upper communications: RS-232C/RS-485 Selection with switch

## 1. Other manuals to be consulted

This manual is for the communications interface only. For the installations of this instrument, please refer to the following separate manuals:

- 1) KR2000 General Manual (Manual No. INE-365)
- 2) KR2000 Installation/Connection Manual (Manual No. INE-366)
- 3) SC8-10 Line Converter (Manual No. INE-39)

\* For the personal computer (PC) you use, refer to the manual attached to the PC.

## 2. Caution display Precaution

This manual contains explanation with  Precaution . Observe these precautions when operating and handling the communications interface, otherwise damage of this unit, deterioration in performance or operation failure may occur.

### Precaution

- (1) The right is reserved to change the contents of this manual at any time without notice.
- (2) The contents of this manual have been prepared professionally. However, if you have any questions, or notice of error or an omission of descriptions found on this manual, please contact your nearest CHINO sales agent.
- (3) CHINO Corporation is not responsible for any results influenced by the operation of this communications interface, irrespective of item (2) above.

# 1 General

The communications interfaces available in this unit are Ethernet as standard and 2 kinds of serial communications, RS-232C/RS485, as an option. Via these communications, a PC can receive measured data and set various parameters.

## 1.1 RS-232C communications interface

The RS-232C is the data communications standard being set and issued by EIA (Electronic Industries Association) in the USA and the correspondence Japanese standard is JIS C 6361.

This standard covers the interfaces between the MODEM and the connected data terminal units, and specifies electrical and mechanical specifications only. Most of the RS-232C communications interfaces are being used in PCs and industrial instruments such as the KR2000 series graphic recorder, and do not completely conform to this standard. Signal wire numbers and connectors of the RS-232C communications interface may differ from those specified in the standard. Also, since this standard does not specify any software parts, so-called [data transmission procedures], units having the RS-232C communications interface cannot be interconnected with each other unconditionally. For these reasons, users must survey and check the specifications and transmission procedures in advance of units being connected. However, if a unit connected is a PC or similar device that can optionally program the specifications, most units can be connected via proper software programs created by a systems engineer.

## 1.2 RS-485 communications interface

The RS-485 communications interface can communicate with multiple KR2000 series graphic recorders (up to 31 sets) in parallel by signals conforming to the RS-485.

There are few PCs having the RS-485 communications interface. However, since these communications interfaces are characterized with serial communications, it is easily connectable to a PC having the RS-232C communications interface by using an RS-232C ⇔ RS-485 signal-converting unit. A line converter (Model SC8-10) is available for RS-232C ⇔ RS-485 signal conversion from CHINO.

## 1.3 Ethernet

Ethernet is the communications standard specified in IEEE802.3 and is the most widely installed small-sized LAN technology. The KR2000 series graphic recorder is connected to a LAN established by the Ethernet and performs reception of measured data, setting of various parameters, etc.

For the specifications of this unit, connections for the Ethernet, etc., refer to the general manual for this unit.

## 1.4 MODBUS protocol

The KR2000 series graphic recorder employs MODBUS protocol as the communications protocol.

The MODBUS protocol has RTU mode and ASCII mode that can be selected by keys on the front of this unit or the communications.

By using the MODBUS protocol, operation of measurement, setting, etc. to instruments can be performed.

Ethernet interface performs by implementing the MODBUS protocol on TCP protocol packet.

\* MODBUS is a registered trademark of Schneider Automation Inc.

## 2 Communications specifications

### 2.1 Serial communications

Specifications of the serial communications of this unit are as follows. \* mark shows factory default settings.

- Start-stop synchronization system
- Half-duplex (polling selecting system)
- Protocol: MODBUS protocol
- Transmission mode: RTU mode\* or ASCII mode
- Transmission speed: 19200 bps or 9600 bps\* selectable
- Start bit: 1 bit
- Data length: 7 bits or 8 bits\* (depended on transmission mode)
- Parity bit: Even, Odd or Non\* (none) (depended on transmission mode)
- Stop bit: 1 bit\* or 2 bits (depended on transmission mode)
- Transmission code: Binary\* or ASCII (depended on transmission mode)
- Error check: CRC-16\* or LRC (depended on transmission mode)
- External units precedence communications system
- Data transmission procedure: No procedure
- Signals used: Transmission/reception of data only (Control signal not used)

### 2.2 Ethernet communications

Specifications of the Ethernet communications of this unit are as follows.

- Media: Ethernet (10BASE-T/100BASE-TX)
- Communications mode: Full-duplex/Half-duplex)
- Communications speed: 10Mbps (1-BASE-T)/100Mbps (100BASE-TX)  
However, as the communications speed and the communications mode are automatically recognized, fixed settings are disabled.
- Protocol: MODBUS (RTU) protocol on TCP/IP
- Number of simultaneous connection: 1 (for upper communications using the MODBUS protocol only)

This unit provides functions of Web, FTP, etc., but this manual describes data communications using MODBUS communications only.

The relation of the MODBUS communications and TCP/IP layers are shown in the table below.

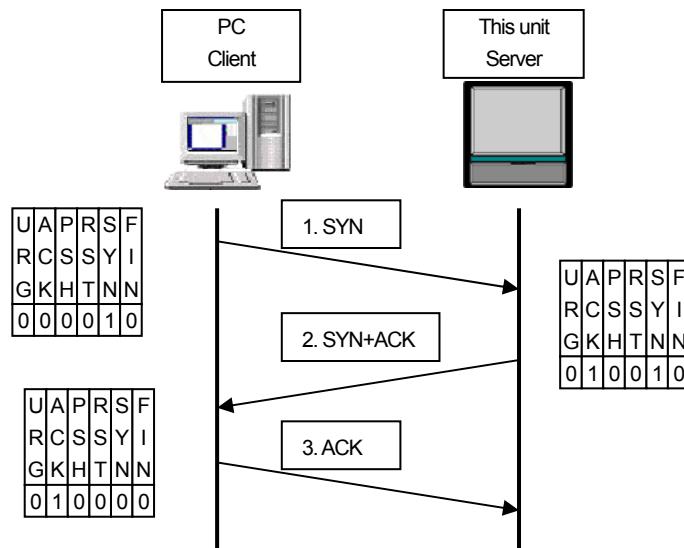
TCP/IP Model Layers	Main protocols used in Ethernet communications
Application layer	MODBUS
Transport layer	TCP
Internet layer	IP, ARP
Physical layer/Data link layer	Hardware (Ethernet)

For details of the MODBUS protocol, refer to **5 MODBUS protocol**.

## 2.2.1 Establishment of TCP connection

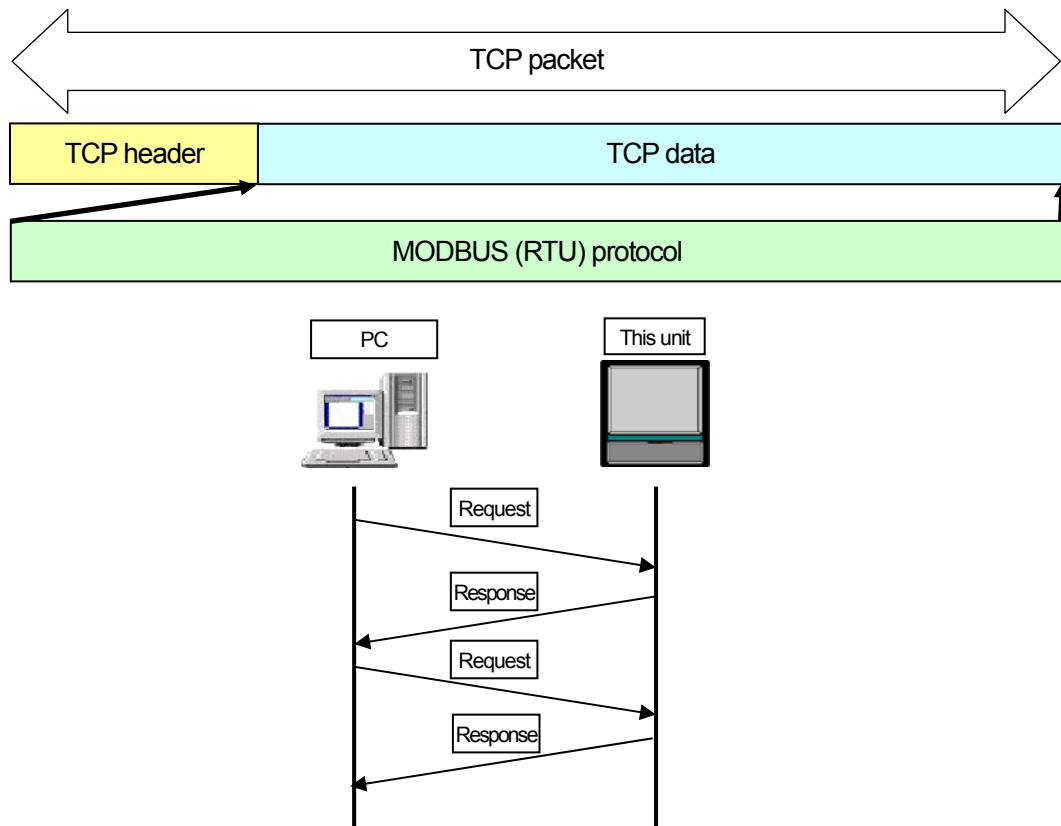
When the upper communications between a PC (the side which requires data: Client) and this unit (the side of which data is required: Server) is performed, it starts from establishing a TCP connection according to the following procedures first.

1. The PC transmits the TCP packet with the SYN flag set to this unit.
2. When this unit receives the SYN packet, it transmits the TCP packet the SYN+ACK flags set to the PC.
3. When the PC receives the SYN+ACK packet, it transmits the TCP packet with the ACK flag set to this unit.



## 2.2.2 Data transmission and reception through TCP

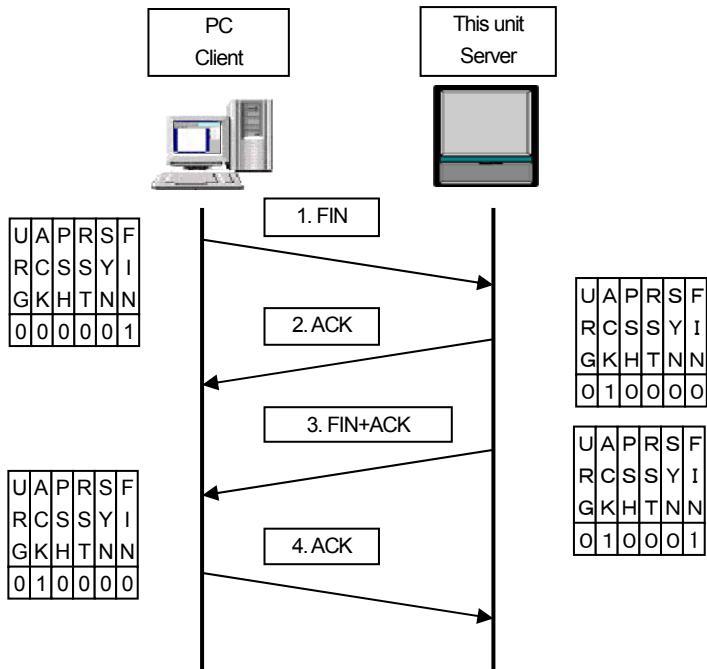
When the connection is established, transmission and reception of various data through the MODBUS (RTU) protocol on the TCP data between the PC (Client) side and this unit (Server) are performed.



### 2.2.3 Disconnection of TCP connection

The communication flow at the disconnection of the TCP connection is as follows.

1. The PC transmits the TCP packet with the FIN flag set to this unit.
2. When this unit receives the FIN packet, it transmits the TCP packet the ACK flag set to the PC.
3. This unit transmits the FIN+ACK packet to the PC.
4. The PC transmits the ACK packet responding to the FIN.



### 2.2.4 Functions at communications failure

The followings are functions of this unit when the communications failure on the TCP/IP occurs.

- In case that there is no response from a communication partner (PC, etc.)  
When a response (ACK) packet does not return after this unit transmits data to a communication partner on Ethernet, this unit repeats to retry transmission (up to about 3 minutes).

When there is no response also to the transmission retry packet, this unit disconnects the TCP connection.

When the communication partner requests to connect the TCP connection to this unit before this unit disconnects the TCP connection, this unit transmits the RST packet to refuse the connection.

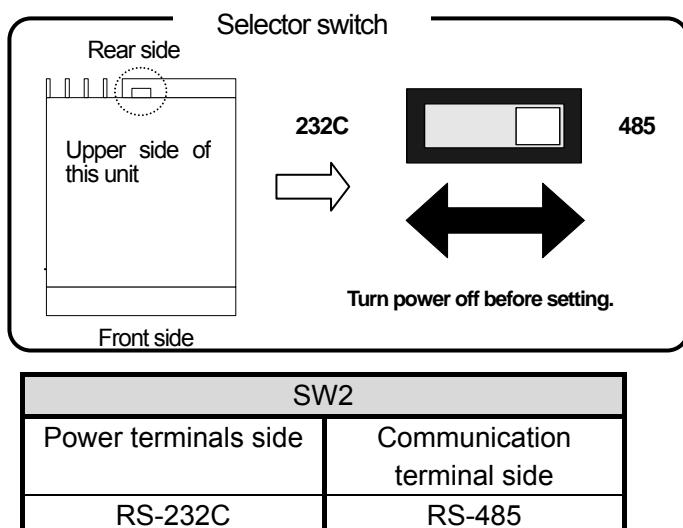
In addition, this unit transmits the RST packet in the following cases.

- When this unit receives the TCP packet from other than the partner being connected
  - When this unit receives the RST packet from the communication partner
- 
- When this unit receives an unexpected reply packet  
Fundamentally, this unit ignores the unexpected reply packet. However, this unit disconnects the TCP connection as soon as it receives the RST packet in case of forcible disconnection of the TCP connection by the PC side and so on.

# 3 Confirmation of communications specifications and settings

## 3.1 Switch settings

When the serial communication is used, before installations and connections, select the RS-232C or RS-485 with the selector switch placed the upper part of this unit.



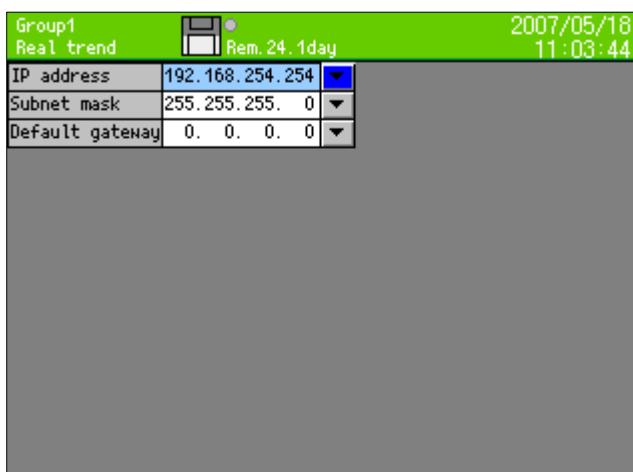
### ⚠ Precaution

Turn the power of this recorder off before the setting of the above switch.  
In addition, please confirm that the switch is pushed surely to a side.

## 3.2 Settings from this unit

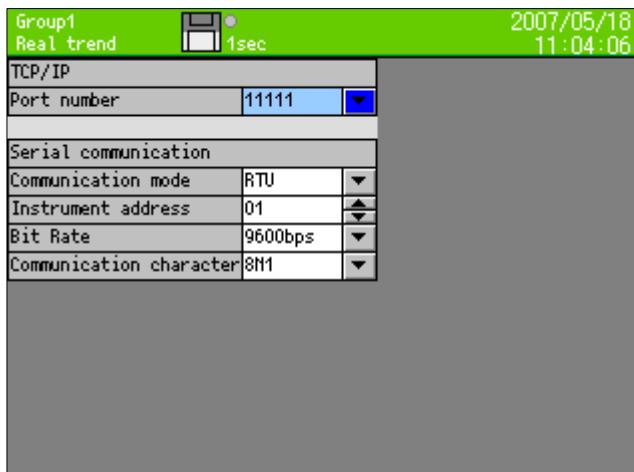
### 3.2.1 Settings for Ethernet

Push [MENU] key, select [Network settings] from the setting menu displayed, and then press [ENTER] key. From the menu displayed here, select [Ethernet settings] and push [ENTER] key to display the setting screen shown below. Set the IP address, the subnet mask and the default gateway if desired. For the details, refer to Para. 13.10.1 **Settings for Ethernet** in the KR2000 General Manual.



### 3.2.2 Settings for upper communications

Push [MENU] key, select [System settings] from the setting menu displayed, and then press [ENTER] key. From the menu displayed here, select [Upper communications] and push [ENTER] key to display the setting screen shown below. Set each item if desired.



- Port number: Specify the port number used in the upper communications\* via Ethernet.
- Communications mode: Select the RTU/ASCII.
- Instrument address: Set an arbitrary number in the range from 01 to 31.
- Bit rate: Select 9600bps or 19200bps.
- Communications character: Select it from the codes listed below.

Code	Character length	Parity	Stop bit
7E1	7 bits	Even	1
7E2			2
7O1		Odd	1
7O2			2
8N1	8 bits	None	1
8N2			2
8E1		Even	1
8E2			2
8O1		Odd	1
8O2			2

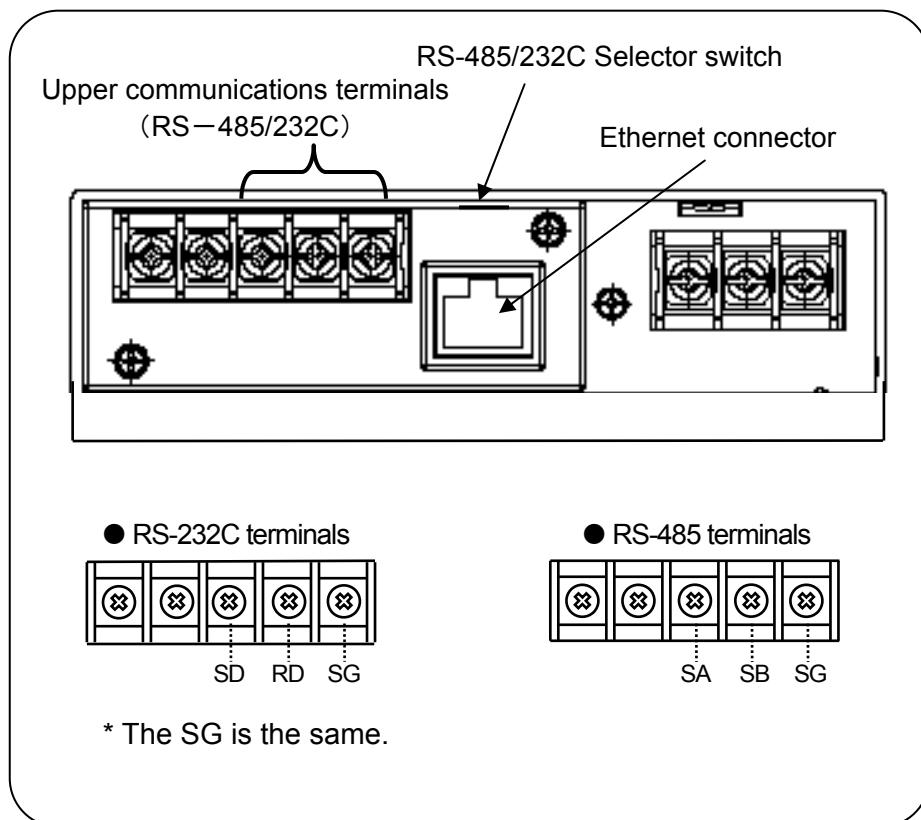
\* In case of the upper communications via Ethernet, the communications mode is the RTU and the instrument address is fixed at "01".

# 4 Connections

## 4.1 Connection precautions

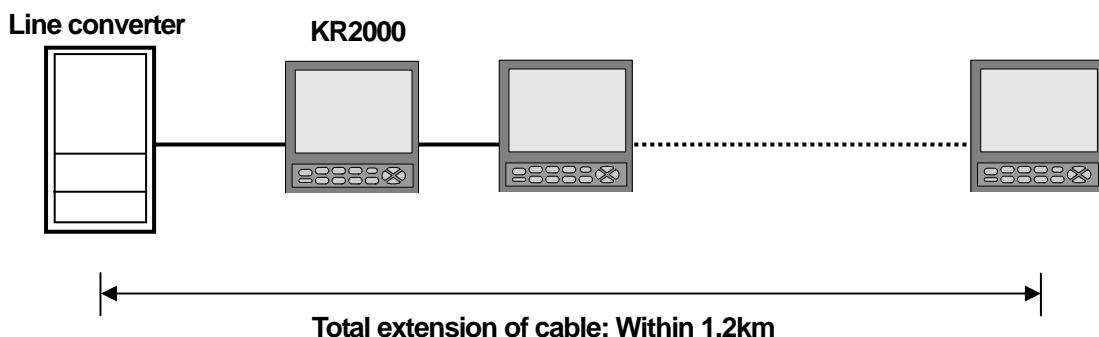
### 4.1.1 Communications Terminals

In case of the serial communications, the connection terminals are different with each communications interface. For the details, refer to Para. **4.7 Connections of communications I/F terminals** in the KR2000 Installation/Connection Manual.



### 4.1.2 Total extension of RS-485 communications cable is up to 1.2km.

The wiring distance between each instrument is arbitrary, but the total extension length of cable is within 1.2km. (Line converter ⇔ the termination unit of KR2000 series graphic recorders)



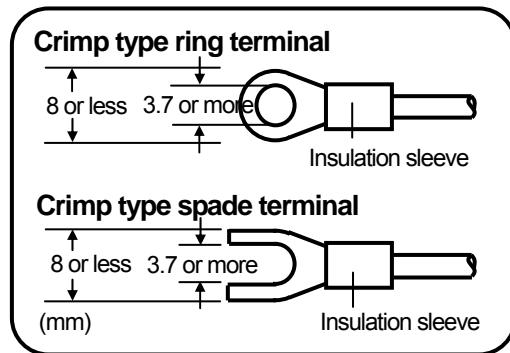
#### 4.1.3 Take measures against noise

Separate the communications cable from power lines and other communications lines more than 50 cm not to be affected by noise.

In addition, when the communications using a PC or an Ethernet hub are performed, depending on circumstances, the hub, communications ICs, or the PC itself may be strongly affected by noise and failures may occur in communication with this unit. In this case, take sufficient measures against noise for the communication lines, the power lines, etc.

#### 4.1.4 Crimp type terminals

Falling off of connections is one of communications failures. Terminate the communications cable with crimp type ring or spade terminals with an insulation sleeve. (The terminal screws of KR2000 series graphic recorders are M4mm and the terminal screws of the line converter are M3.5mm.)



#### 4.1.5 Attach a termination resistor

For using the RS-485 communications, mount a  $100\ \Omega$  resistor to the KR2000 series graphic recorder connected at the final end. (For details, see Section 4.4)

[A general metal film resistor can be used. The resistor (sold separately) is available at CHINO.]

However, there are also environments where a communication error cannot take place easily without the termination resistor attached

#### 4.1.6 Number of this unit connectable

For RS-232C: 1 set

For RS-485: Up to 31 sets\* including other RS-485-compatible instruments

\* ICs complying with the RS-485 standards are used in this unit, but the number of the units that can communicate in high quality is different by cables used, distance and types of instruments connected.

## 4.2 Communications cables

Use communications dedicated cables. Communications dedicated cables (sold separately) are available at CHINO.

### 4.2.1 Communications cables for RS-232C

(1) Connections between a PC (9 pins) and the KR2000 series recorder, and between a PC (9 pins) and a line converter

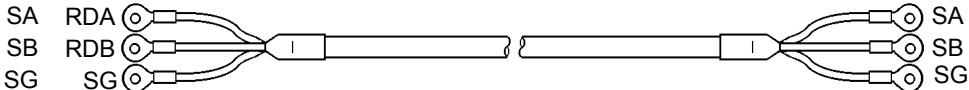
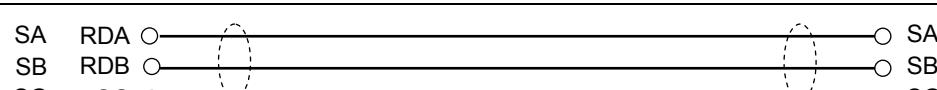
Cable	9-pin connector $\longleftrightarrow$ RS-232C cable with crimp type ring terminals		
Shape	9-pin connector for a PC	RS-232C cable (max. length: 15m)	Terminals for the KR2000 series recorder or a line converter
Internal wiring			
Type code	RZ-CRS6□□ Cable length: 1~15m (to be specified)		

(1) Connections between a PC (25 pins) and the KR2000 series recorder, and between a PC (25 pins) and a line converter

Cable	25-pin connector $\longleftrightarrow$ RS-232C cable with crimp type ring terminals		
Shape	25-pin connector for a PC	RS-232C cable (max. length: 15m)	Terminals for the KR2000 series recorder or a line converter
Internal wiring		 For NEC's PC98 series (except NX)	
Type code	RZ-CRS2□□ Cable length: 1 ~ 15m (to be specified)		

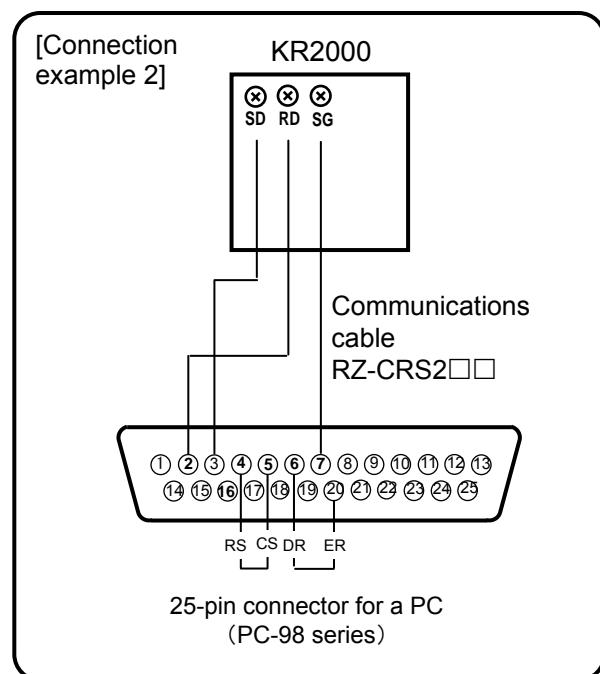
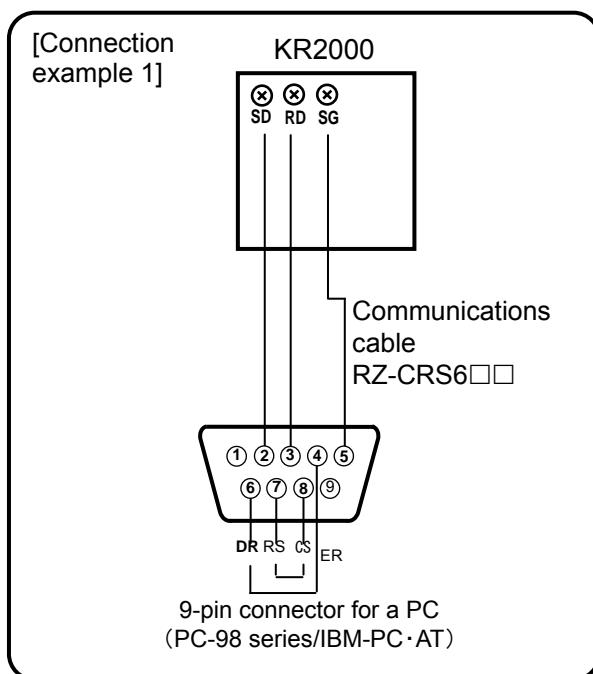
#### 4.2.2 Communications cables for RS-485

Connections between a line converter and the KR2000 series recorder, and between the KR2000 recorder and the KR2000 recorder

Cable	Crimp type ring terminals $\longleftrightarrow$ RS-485 with crimp type ring terminals
Shape	 <p>Line converter: RDA RDB SG KR2000: SA SB SG</p> <p>The cable consists of a twisted dual-core CVVS wires with SG (signal grounding) wire at both ends. As the line converter has no SG terminal, cut this wire to use.</p>
Internal wiring	
Type code	RZ-LEC□□□ or RZ-CSS□□□ Cable length: 1 ~ 200m (to be specified)

### 4.3 RS-232C connections

This unit uses three control signals of Send (SD), Receive (RD), Signal ground (SG) only. Since regular PCs are controlled by control signals, the PCs do not function by only connecting three signal cables without wiring processing inside the connector. The wiring processing depends upon the control signals being controlled by the PC. For details, read the manual for the PC used.



#### Precaution

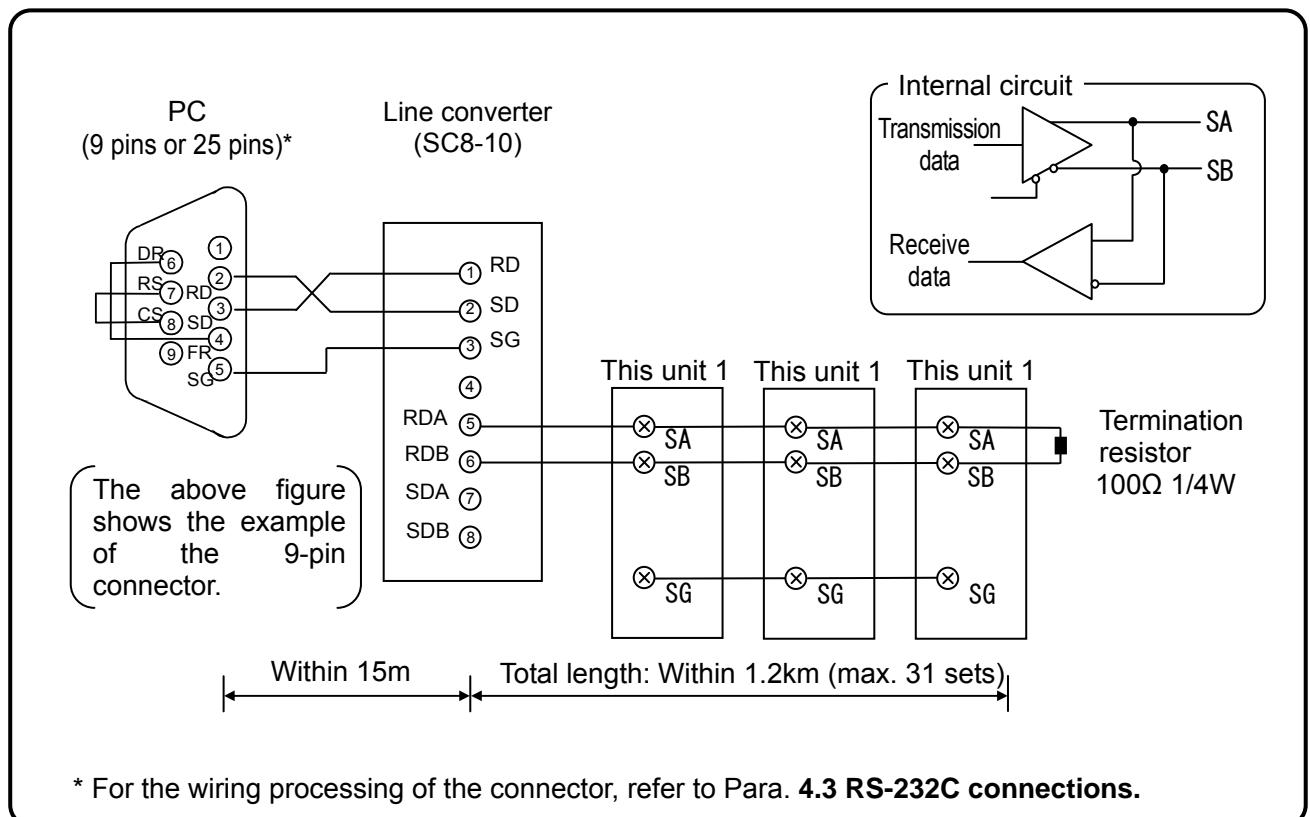
The length of the RS-232C cable is maximum 15m. The connection example 1 is for the 9-pin connector and the connection example 2 is for the 25-pin connector.

**Don't connect the SG line to the protective conductor terminal (ground terminal).**

## 4.4 RS-485 connections

This paragraph describes the connections of the RS-485 communications interface to a PC via the line converter (Model SC8-10: sold separately). Since the line converter and the PC use three control signals of Send, Receive and Signal ground only, the wiring processing inside the connector is required in the same way as in RS-232C connections.

[For details, read the manual for the line converter (Model SC8-10: sold separately).]



### ⚠ Precaution

Don't connect the SG line to the protective conductor terminal (ground terminal).

## 5 MODBUS protocol

### Precautions and basic procedure of communications

#### ⚠ Precautions

##### 1. As the control signal wire is not used, pay attention to retransmit a command.

The serial interface of this instrument communicates without using control wire.

Pay attention to retransmit a command as reception defects may occur depending on the status of this instrument.

##### 2. Do not remove any devices or communication cables and do not turn ON or OFF the power supply during communications.

If devices or cables configuring the serial interface are removed or if the power is turned ON (OFF) during communications, the communications may stop or an error may occur. If this happens, reset all the devices configuring the serial interface and restart the communications from the beginning.

##### 3. Transmit the next command after confirming that the communication drive is switched OFF.

In RS-485, if multiple instruments are connected to same communications line, then only 1 instrument, of which instrument number is specified from the PC, drives the communications line. At that time, for transmitting all the characters to the PC completely, the drive of the communications line is turned OFF with some time interval after the last character is sent. If the PC transmits a command to the next instrument before it becomes OFF, then the signal crashes and normal communications cannot be done. Therefore take care when a high speed PC is used. This interval is around 5ms.

## 5.1 Transmission mode of message

There are 2 types of the RTU (Remote Terminal Unit) mode and the ASCII mode.

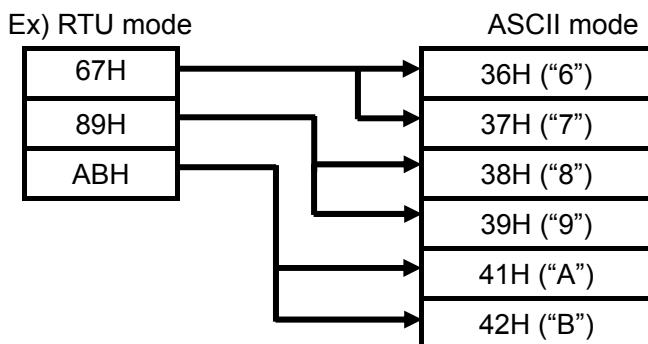
(Table 1. Comparison of RTU mode and ASCII mode)

Item	RTU mode	ASCII mode
Transmission code	Binary	ASCII
Error detection (Error check)	Vertical direction	Parity
	Horizontal direction	CRC-16 LRC
Character configuration	Start bit	1 bit
	Data bit	8 bits 7 bits, 8 bits
	Parity bit	None, odd, even None (Note), odd, even
	Stop bit	1, 2 bits
Message start code	None	:
Message end code	None	CR, LF
Data time interval	Less than 28-bit hours	Less than 1 second

(Note) When the data bit is 7 bits, [Parity bit None] is not applicable.

### 5.1.1 Transmission data

The RTU mode is binary transmission. The ASCII mode divides 8 bits binary of the RTU into higher 4 bits and lower 4 bits and converts into characters respectively (0-9, A-F).



The RTU mode is half in the message length as compared to the ASCII mode and enables the efficient transmission.

### 5.1.2 Message frame configuration

The RTU mode is configured by message parts only.

The ASCII mode is configured by the start character “: (colon, 3AH)”, messages and the end character “CR (carriage return, ODH) + LF (Line feed, OAH)”.



As the ASCII mode has the start character of “:” it has an advantage that the troubleshooting is easy.

## 5.2 Data time interval

**RTU mode:** Less than 28-bit hours (2.8msec at 9600bps, 1.4msec at 19200bps)

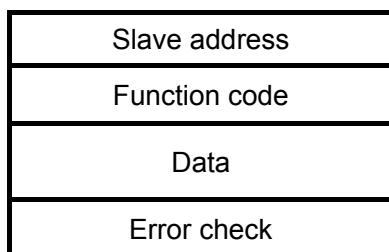
**ASCII mode:** Less than 1 second

When a message is sent, be careful that the time interval of data configuring one message does not exceed the time shown above. If the time interval exceeds the time shown above, the receiving side (this unit) judges that the transmission from a sender is finished and the data are processed as the reception of an abnormal message.

In the RTU mode, message characters should be sent continuously, but in the ASCII mode, as the interval between the characters is maximum 1 second, a master (PC) whose processing speed is comparatively slow can be used.

## 5.3 Message configuration

The MODBUS messages have the following configuration for both of the RTU mode and the ASCII mode.



### 5.3.1 Slave address

Slave addresses should be set in advance in a range of 1-31. The master usually communicates with 1 slave. Only the slave corresponding with the slave address in the command message from the master responds to that message.

The slave address “0” is used in messages (Broadcast) to all the slaves from the master. In this case, the slaves do not return any response.

### 5.3.2 Function code

The function codes are the codes to be performed in the slaves and each data is roughly categorized as follows. The table shows original functions of MODBUS and functions of our MODBUS instruments.

(Table 2. Function codes)

Code	Function	Unit	MODBUS original function (Reference)
01	Reading of digital (ON/OFF) setting value	1 bit	Reading the status of coil
02	Reading of digital input data	1 bit	Reading the status of input relay
03	Reading of analog setting value	16 bits	Reading the content of holding register
04	Reading of analog input data	16 bits	Reading the content of input register
05	Writing digital setting value	1 bit	Changing the status of single coil
06	Writing analog setting value	16 bits	Writing to single holding register
08	Transmission of received data (for diagnosis)		Loop back test
16	Writing multiple analog setting values		Writing to multiple holding registers

<b>1. Digital settings value</b>	Parameters to change functions including record ON/OFF, marker text record etc.
<b>2. Digital input data</b>	Data of event activation status etc.
<b>3. Analog settings value</b>	Various setting information.
<b>4. Analog input data</b>	Numeric values are in the range of 16 bits (-32763 to 32767). Measurement data, instrument specification information etc.
	Numeric values in the range of 16 bits are outputted.

\* For the details, refer to the reference table.

### 5.3.3 Data part

Data structures differ depending on the function codes. In case of requests from the master, they are configured by a code number (relative numbers calculated from reference numbers mentioned hereafter) of the target data for reading/writing and number of data, etc. Responses from the slaves are configured by data requested by a command etc.

All basic data of MODBUS are 16-bit integers and existence of a mark is decided for each data. Therefore real values of data like measured values are expressed by allocating a decimal place to a different address or by normalizing with high/low values of a scale while the decimal place is fixed. This instrument adopts the allocation method of the decimal place to a different address.

#### ⚠ Precaution

In the data part, there are specific numeric values such as input data allocated as error data. When using such data, perform the error judgment of data first and then combine them with decimal point data.  
If such error data are combined with decimal point data first, they are judged as normal data.

### 5.3.4 Reference number

Numbers called “Reference numbers” are allocated to all the data of this instrument and these numbers are necessary for reading/writing data.

The data are classified into “Digital setting values”, “Digital input data”, “Analog input data” and “Analog setting values” depending on their types. Number designation in messages is performed by relative numbers corresponding to the respective reference numbers.

(Table 3. Reference numbers and relative numbers)

Data type	Reference number	Relative number	MODBUS original (Reference)
Digital setting value	1 ~ 10000	Reference number - 1	Coil
Digital input data	10001 ~ 20000	Reference number - 10001	Input relay
Analog input data	30001 ~ 40000	Reference number - 30001	Input register
Analog setting value	40001 ~ 50000	Reference number - 40001	Hold register

For example, the relative number of “Reference number 30101 (Data of Channel 1)” mentioned later becomes “100”.

(Table 4. Reference numbers)

Data type	Parameter	Reference number	Corresponding function code	Reference table
Digital setting value	Key lock Record ON/OFF Marker text writing	1 ~ 20	01 (READ) 05 (WRITE)	Para. 5.7.1
Digital input data	Event status	10101 ~ 10800	02 (READ)	Para. 5.7.2
Analog input data	Instrument information Measurement data	30001 ~ 30093 30101 ~ 30188	04 (READ)	Para. 5.7.3
Analog setting value	Common parameter (Date/time, upper communications, processing reset etc.)  Setting parameter for each channel  Communications parameter  Group parameter  Common parameter (screen, schedule etc.)  File-related-parameter  Marker text	40001 ~ 40098  40102 ~ 44500  45001 ~ 45465  46001 ~ 46500  47110 ~ 47167  47207 ~ 47700  48001 ~ 48152	03 (READ) 06 (WRITE) 16 (WRITE)	Para. 5.7.4

### 5.3.5 Error check

The error check of transmission frame differs depending on the mode.

RTU mode: CRC-16

ASCII mode: LRC

#### 5.3.5.1 Calculation of CRC-16

The CRC method divides the information to be sent by a generating polynomial and transmits it by attaching the calculated remainder to its end. The generating polynomial is as follows.

$$1 + X^2 + X^{15} + X^{16}$$

The following calculation is performed for information from a slave address to the end of data.

- 1) Initialization (=FFFFH) of data of CRC-16 (consider as X)
- 2) Exclusive OR of data 1 and X (EX-OR) → X
- 3) 1-bit shifting of X to the right → X
- 4) For a carry existed, A001H and EX-OR are taken, else go to 5). → X
- 5) 3) and 4) are repeated up to 8-time shifts.
- 6) EX-OR of the following data and X → X
- 7) Same as 3) - 5)
- 8) Repeating up to the last data.
- 9) A message is created in the order from lower digits to higher digits of the calculated 16-bit data (X).

Example)

When data is 

02H	07H
-----	-----

, the CRC becomes 1241H.

Then the error check data becomes 

41H	12H
-----	-----

.

```

Reference: CRC-16 calculation program (C language)
***** CRC-16 calculation program *****/
#include <stdio.h>
#include <conio.h>

void main(void){
    /** Internal variable declaration ***/
    unsigned int iLoopCnt;          /* Loop counter */
    unsigned short usData;          /* Input data */
    unsigned short usCrcData;        /* CRC-16 data */
    unsigned short usErrChkData;     /* Error check data */
    int iDummy;                     /* Dummy variable */

    /* (1) Initialization of output result of a CRC-16 data */
    usCrcData = 0xffff;

    printf("Enter the hexadecimal data (Cancel by [q].) >\n");
    while( scanf("%x", &usData) != 0){
        /* (2) (6) Taking exclusive OR of the CRC output result and the entered data */
        usCrcData = usData ^ usCrcData;

        /** CRC calculation processing ***/
        /* (5) Repetition up to 8-bit shifts */
        for(iLoopCnt = 0 ; iLoopCnt < 8 ; iLoopCnt++){
            /* (4) Checking if there is a carry. */
            if(usCrcData & 0x0001){
                /* (4) At a carry activated */
                /* (3) 1-bit shifting of the CRC output result to the right */
                usCrcData = usCrcData >> 1;

                /* (4) Taking exclusive OR with A001H */
                usCrcData = usCrcData ^ 0xa001;
            }else{
                /* (4) At a carry no activated */
                /* (3) 1-bit shifting of the CRC output result to the right */
                usCrcData = usCrcData >> 1;
            }
        } /* for */
    }; /* while */

    printf("The CRC-16 data is %xH.", usCrcData);

    /* Error check data creation*/
    usErrChkData = (usCrcData >> 8) | (usCrcData << 8);
    printf("The data for the error check is %xH.", usErrChkData);

    iDummy = getch();
}

```

### 5.3.5.2 LRC calculation method

The data from a slave address up to the end of the data are calculated by the following procedure.

- 1) A message is created in the RTU mode.
- 2) The data from the start (slave address) to the end are added. →X
- 3) The complement (Bit inversion) of X is taken. →X'
- 4) 1 is added. (X=X+1)
- 5) X' is attached at the end of the message as the LRC.
- 6) The entire data is converted into the ASCII character.

Example) When the data is 

02H	07H
-----	-----

, the LRC becomes F7H. Therefore the binary message becomes 

02H	07H	F7H
-----	-----	-----

 and the ASCII message becomes 

30H	32H	30H	37H	46H	37H
-----	-----	-----	-----	-----	-----

### 5.3.6 Precautions at the time of data processing

- 1) As the measurement data and the decimal place are assigned to different numbers, it is necessary to use both information at replaying the data.
- 2) As each 1 data can be accessed (changed), precautions are necessary at the time of setting the associated data including Initialization process of the associated data due to change of a range number, etc.
- 3) Read and write the data in the range stipulated by the reference number. Reading and writing of reference number not stipulated may have an adverse effect on the instrument operation.
- 4) At the reading of continuous reference numbers, the data of the reference number not stipulated becomes "0".
- 5) At the writing to continuous reference numbers, if error is detected, all the settings become disabled.

## 5.4 Message creation

A message is consisted of 1) Slave address, 2) Function code, 3) Data part and 4) Error check code. (Refer to Para. 5.3)

The number of data that can be read once is within the following range.

Transmission mode	Number of data
RTU	120
ASCII	60

The creating method of a message is explained in the following example.

Example) Reading of the measurement data of “Channel 1” of this unit set by the “Slave address 02”.

### 5.4.1 RTU mode message

1) Slave address: 02 ( **02H** )

2) Function code: 04 ( **04H** )

t is the reading of the analog input data (contents of input register). When the function code is “04”, it is necessary to specify “Relative number of data 2 bytes” for reading in the data part and “Number of data 2 byte” for reading. (Refer to Para. 5.3. Refer to Para. 5.3.2 for “Function code: 04”.)

\* It is necessary to confirm the number of bytes of data.

3) Data part: Starting relative number 100 ( **00H 64H** ), Number of data 2 ( **00H 02H** )

The measured data (analog input data) is stored in the reference number 0001 to 40000. (Refer to Para. 5.3.4 Table 3). By the reference table, you will understand that the integer part of CH1 is stored in “30101” and the decimal place is stored in “30102”. (Refer to Para. 5.7. and refer to Para. 5.7.3 for reading of measured data.) The relative number of the starting “Reference number 30101” is 30101-30001=100. If it is expressed in 2 bytes, it becomes “**00H 64H**”. The number of data to be read is the integer part of CH 1 and the decimal place and if it is expressed in the hexadecimal 2 bytes, it becomes “**00H 02H**”.

4) Error check: Calculation by the CRC-16 2730H ( **30H 27H** )

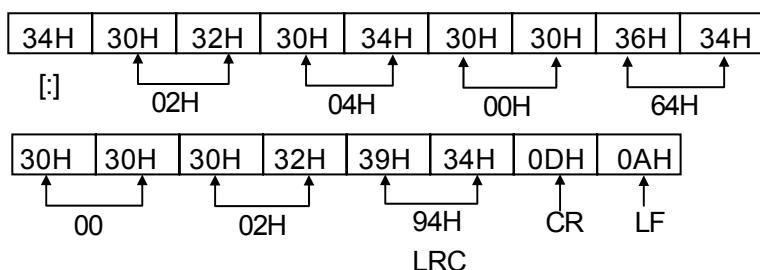
The error check in RTU mode is performed by the CRC-16. (Refer to Para. 5.3.5.1) The data of basic part of the message becomes **02H 04H 00H 64H 00H 02H** as per 1) to 3), and the CRC-16 becomes 2730H. Therefore the error check data becomes **30H 27H**.

5) Message: A message is created with the configuration of **02H 04H 00H 64H 00H 02H 30H 27H**.  
(Refer to 5.3)

### 5.4.2 ASCII mode message

The error check LRC is calculated from basic part of the message. The LRC becomes 94H. (Refer to 5.3.5.2). Each data of the basic part is converted into the ASCII code. In addition, the LRC is converted into ASCII code and is attached to the basic part. The start character of the message ":", and “CR” and “LF” are added to the end.

(Example) In case of 02H, 04H, 00H, 64H, 00H, 02H, 30H and 27H



## 5.5 Function Code

The response for each function is given below. (Refer to <Table 2 Function code table> in Para. 5.3.2)  
 Note) Refer to 5.6 for responses for abnormality.

### 5.5.1 Reading of digital setting values (Reading of coil status)

[Function code:01 (01H)]

“Digital (ON/OFF) setting values with the continuous numbers” are read for the number of data specified from the start number specified. The ON/OFF data is arranged per 8 by 8 in numerical order in 1 data (1 byte) and configures a data of the response message. The LSB (D0 side) of each data is the digital data of the youngest number. When the number of read data pieces is not in multiples of 8, the unnecessary bits become 0.

Example) Reading of 10 digital setting value reference numbers from 8 to 17 of the slave 2

Reference number	8	9	10	11	12	13	14	15	16	17
Data	-	-	-	-	-	-	-	-	-	ON

“0” is responded as no reference number exists.

Record  
ON

<RTU mode>

Master→Instrument

Slave address	02H
Function code	01H
Start No. (H)	00H
End No. (L)	07H
Number of data (H)	00H
Number of data (L)	0AH
CRC (L)	0DH
CRC (H)	FFH

Instrument→Master (Normal)

Slave address	02H
Function code	01H
Data pieces	02H
First 8 data	00H
Next 8 data	02H
CRC (L)	7CH
CRC (H)	3DH



First 8 data

0	0	0	0	0	0	0	0
↑							↑

15 ----- 8  
Reference number

Next 8 data

0	0	0	0	0	0	1	0
↑							↑

Reference number 17 16

<ASCII mode error check>

Error check: The CRC (L) and the CRC (H) parts are as follows.

LRC	ECH	LRC	F9H
-----	-----	-----	-----

Note) The start number (Relative number) is “Reference number - 1”. (Decimal 7 (= 8 - 1) → Hexadecimal 07H)

Note) The data pieces are the number of bytes of data.

(It differs from the number of data requested. In the example, the requested number of data is 10 and the data pieces are 2.)

### 5.5.2 Reading of digital input data (Reading of input relay status)

[Function code: 02 (02H)]

“Digital (ON/OFF) input data with the continuous numbers” are read for the number of data specified from the start number specified. The ON/OFF data is arranged per 8 by 8 in numerical order in 1 data (1 byte) and configures a data of the response message. The LSB (D0 side) of each data is the digital data of the youngest number. When the number of read data pieces is not in multiples of 8, the unnecessary bits become 0.

The start number (Relative number) is “Reference number - 10001”.

Example) Reading of 4 digital input setting value reference numbers from 10109 to 10112 of the slave 2

Reference number	10109	10110	10111	10112	10113	10114	10115	10116
Data	ON	OFF	ON	OFF	-	-	-	-

Level 1 Level 2 Level 3 Level 4 “0” is responded as no  
CH1 Event activation status reference number exists.

<RTU mode>

Master→Instrument

Slave address	02H
Function code	02H
Start No. (H)	00H
End No. (L)	6CH
Number of data (H)	00H
Number of data (L)	04H
CRC (L)	B9H
CRC (H)	E7H

Instrument→Master (Normal)

Slave address	02H
Function code	02H
Data pieces	01H
First 8 data	05H
CRC (L)	61H
CRC (H)	CFH



First 8 data

0 0 0 0 0 1 0 1 (05H)

Reference number 10112.....10109

"0" is responded as the reference numbers from 10113 to 10116 do not exist.

<ASCII mode error check>

Error check: The CRC (L) and the CRC (H) parts are as follows.

LRC	8CH	LRC	F6H
-----	-----	-----	-----

Note) The start number (Relative number) is "Reference number - 10001".

(Decimal 108 (= 10109 - 10001) → Hexadecimal 6CH)

Note) The data pieces are the number of bytes of data.

(It differs from the number of data requested. In the example, the requested number of data is 4 and the data piece is 1.)

### 5.5.3 Reading of analog setting values (Reading of maintenance register contents)

[Function code: 03 (03H)]

"Analog setting values (2 bytes: 16 bits) with the continuous numbers" are read for the number of data specified from the start number specified. The data is arranged by splitting into higher 8 bits and lower 8 bits in numerical order and configures a data of the response message.

Example) Reading of the range high/low limits and the decimal point of Channel 1 of the slave 2  
(Reading of 3 analog setting value reference numbers from 40104 to 40106 of the slave 2)

Reference number	40104	40105	40106
Data	0 (0000H)	1000 (03E8H)	1 (0001H)

← Data example 0.0 ~ 100.0

<RTU mode>

Master→Instrument

Slave address	02H
Function code	03H
Start No. (H)	00H
End No. (L)	67H
Number of data (H)	00H
Number of data (L)	03H
CRC (L)	B4H
CRC (H)	27H

Instrument→Master (Normal)

Slave address	02H
Function code	03H
Data pieces	06H
Low limit value data (H)	00H
Low limit value data (L)	00H
High limit value data (H)	03H
High limit value data (L)	E8H
Decimal point data	00H
Decimal point data (L)	01H
CRC (L)	74H
CRC (H)	35H

<ASCII mode error check>

LRC	91	LRC	09H
-----	----	-----	-----

Note) The start number (Relative number) is "Reference number - 40001".

(Decimal 103 (= 40104 - 40001) → Hexadecimal 67H)

Note) The data pieces are the number of bytes of data.

(It differs from the number of data requested. In the example, the requested number of data is 3 and the data pieces are 6.)

Note) There is a limitation on the data pieces for the message (that this unit can transmit) that can be received at a time. (Refer to Para. 5.4)

## 5.5.4 Reading of analog input data (Reading of input register contents)

[Function code: 04 (034)]

“Analog input data (2 bytes: 16 bits) with the continuous numbers” are read for the number of data specified from the start number specified. The data is arranged by splitting into higher 8 bits and lower 8 bits in numerical order and configures a data of the response message. The response example is same as “Function code 03”, but the start number (Relative number) is “Reference number – 30001”.

## 5.5.5 Writing of digital setting values (Changing of single coil status)

[Function code: 05 (05H)]

The digital setting value specified is put into the status (ON/OFF) specified.

Example) Execution of the marker text writing of the slave 2 (The digital setting value reference number 20 of the slave 2 is turned ON.)

<RTU mode>

Master→Instrument		Instrument→Master (Normal)	
Slave address	02H	Slave address	02H
Function code	05H	Function code	05H
Setting value No. (H)	00H	Setting value No. (H)	00H
Setting value No. (L)	13H	Setting value No. (L)	13H
Setting status (H)	FFH	Setting status (H)	FFH
Setting status (L)	00H	Setting status (L)	00H
CRC (L)	7DH	CRC (L)	7DH
CRC (H)	CCH	CRC (H)	CCH

<ASCII mode error check>

LR	C	E7H	LR	C	E7H
----	---	-----	----	---	-----

Note) In case of a normal response, the response is same as a command message.

Note) The setting value number (Relative number) is “Reference number - 1”. (Decimal 19 (= 20 - 1)  
→ Hexadecimal 13H)

Note) Set “F00HH” at the execution. In the key lock and the record ON/OFF, set “0000H” to turn OFF  
and “FF00H” to turn ON.

Note) When the slave address is set to 0, all slaves perform this command, but no slave responds.

## 5.5.6 Writing of analog setting values (Writing of single maintenance resistor)

[Function code: 06 (06H)]

The analog setting value specified is put into the value specified.

Example) Setting of the sensor correction value of Channel 1 of the slave 2 to 20

(Setting of the analog setting value reference number 40111 of the slave 2 to "20".)

<RTU mode>

Master→Instrument

Slave address	02H
Function code	06H
Setting value No. (H)	00H
Setting value No. (L)	6EH
Setting data (H)	00H
Setting data (L)	14H
CRC (L)	E8H
CRC (H)	2BH

Instrument→Master (Normal)

Slave address	02H
Function code	06H
Setting value No. (H)	00H
Setting value No. (L)	6EH
Setting data (H)	00H
Setting data (L)	14H
CRC (L)	E8H
CRC (H)	2BH

<ASCII mode error check>

LCR	76H
-----	-----

LCR	76H
-----	-----

Note) In case of a normal response, the response is same as a command message.

Note) The setting value number (Relative number) is "Reference number - 40001".

(Decimal 110 (= 40111 - 40001) → Hexadecimal 6EH)

Note) When the slave address is set to 0, all slaves perform this command, but no slave responds.

## 5.5.7 Loop back test

[Function code: 08 (08H)]

The transmission check is performed between the master and slaves. The response is performed according to the diagnosis code specified. With this unit, "Return check by transmitting the received data as it is" is performed and the diagnosis code is fixed with "0000H".

Example) Execution of "Loop back test" in the slave 2

<RTU mode>

Master→Instrument

Slave address	02H	
Function code	08H	
Diagnosis code (H)	Fixed	00H
Diagnosis code (L)		00H
Optional data	*	
Optional data	*	
CRC (L)	*	
CRC (H)	*	

Instrument→Master (Normal)

Slave address	02H	
Function code	08H	
Diagnosis code (H)	Fixed	00H
Diagnosis code (L)		00H
Received data	*	
Received data	*	
CRC (L)	*	
CRC (H)	*	

<ASCII mode error check>

LCR	*
-----	---

LCR	*
-----	---

## 5.5.8 Writing multiple analog setting values (Writing to multiple maintenance registers)

[Function code: 16 (10H)]

The specified number of the analog setting values from the start number specified is put into the values specified. The data is arranged and sent by splitting into higher 8 bits and lower 8 bits in numerical order.

Example) Setting of the range high/low limit values and the decimal point of Channel 1 of the slave 2 to 0.0 ~ 100.0

(Setting of 3 analog setting value reference numbers from 40104 to 40106 of the slave 2)

Reference number	40104	40105	40106
Data	0 (0000H)	1000 (03E8H)	1 (0001H)

← Data example 0.0 ~ 100.0

<RTU mode>

Master→Instrument

Slave address	02H
Function code	10H
Start No. (H)	00H
End No. (L)	67H
Number of data (H)	00H
Number of data (L)	03H
Data pieces	06H
First data (H)	00H
First data (L)	00H
Second data (H)	03H
Second data (L)	E8H
Third data (H)	00H
Third data (L)	01H
CRC (L)	10H
CRC (H)	97H

Instrument→Master (Normal)

Slave address	02H
Function code	10H
Start No. (H)	00H
End No. (L)	67H
Number of data (H)	00H
Number of data (L)	03H
CRC (L)	31H
CRC (H)	E4H

<ASCII mode error check>

LRC	92H
-----	-----

LRC	84H
-----	-----

Note) The start number (Relative number) is “Reference number - 40001”.

(Decimal 103 (= 40104 - 40001) → Hexadecimal 67H)

Note) When the slave address is set to 0, all slaves perform this command, but no slave responds.

Note) There is a limitation on the data pieces for the message (that this unit can receive) that can be sent at a time. (Refer to Para. 5.4)

## 5.6 Process during abnormality

The followings are responses when there is an error in the message content from the master.

### 5.6.1 No response

In the following cases, the message is ignored and no response is performed.

- 1) When a transmission error (overrun, framing, parity, CRC, or LRC) is detected in the message
- 2) When the slave address in the message is not ones own address
- 3) When the data interval of the message is long
  - RTU mode... 28 bits hour or more
  - ASCII mode ... 1 second or more
- 4) When the transmission parameter does not match
- 5) When the received message exceeds 512 bytes

Note) When the slave address is "0" in the writing function, if there is no error in the message, the message is performed but no response is performed.

### 5.6.2 Error message response

When the following error is detected in the message content not having any error shown in Para. 5.6.1 from the master, the code showing its error content is responded as the "Error message".

The format of the error message is as follows.

Slave address
Function code + 80H
Error code
CRC (L)
CRC (H)

Function code	Function code + 80H
02	82H
03	83H
04	84H
06	86H
08	88H
16	90H

The error codes are as follows.

Error code	Content
01H	Defect of a function code When the function code not defined is received
02H	Defect of a Relative number (Reference number) When the received starting number or the received setting value number are other than defined
03H	Defect of the number of data In case of any of the followings 1) When the received function code and the number of data do not match <ul style="list-style-type: none"><li>• When “data pieces” is not twice the “number of data” in case of the function code “16”</li></ul> <ul style="list-style-type: none"><li>2) When the number of data to be sent in response to the received message exceeds the number of data defined<ul style="list-style-type: none"><li>• Maximum 120 data (RTU), Maximum 60 data (ASCII)</li></ul></li></ul>
11H	Out of setting value range (Set error) In case of any of the followings 1) For the range No., etc. not defined 2) When the setting value (binary) exceeds the range of “-30000 ~ 30000” 3) When the decimal point data exceeds the range of “0 ~ 3” 4) When the RJ is set to “internal” for other than thermocouple input ranges 5) When the burnout is set to “enable” for other than thermocouple input ranges, etc.
12H	Setting impossible When a setting message is received in any of the following cases <ul style="list-style-type: none"><li>• When the parameter setting message for multiple channels at the parameter setting for each channel</li><li>• When the parameter setting message for an optional function not built-in (“0” is responded to a message for reading.)</li><li>• When the setting is being performed through the instrument and the Web screen</li><li>• When the setting content is being registered<ul style="list-style-type: none"><li>(The registration starts 3 seconds after the last setting frame is received. The registration takes about 1 second.)</li></ul></li></ul>

## 5.7 Reference table

### 5.7.1 Digital setting values

R/W ... R: READ, W: WRITE

Reference number	Applied function code	R/W	Content	Detail
01	01 05	R W	Keylock	0 (0000h) = Keylock disabled 1 (FF00h) = Keylock enabled The figures shown in parentheses are for the function code 05. Error code: 01H, 02H, 03H, 11H, 12H
17	01 05	R W	Record ON/OFF	0 (0000h) = Record OFF 1 (FF00h) = Record ON The figures shown in parentheses are for the function code 05. Error code: 01H, 02H, 03H, 11H, 12H
20	05	W	Marker text writing	1 (FF00h) = Marker text writing Writing of the text with the number specified by 48002 to the group specified by the analog setting value reference number 48001 The figures shown in parentheses are for the function code 05. Error code: 01H, 02H, 03H, 11H, 12H

## 5.7.2 Digital input data

Reference number	Applied function code	R/W	Content	Detail
10101 10102	02	R	CH1 status 1	Status expression in 2 bits 00: Measured data 01: Calculated data Error code: 01H, 02H, 03H
10105 10106 10107 10108	02	R	CH1 status 2	Status expression in 4 bits 0000: Normal data 0001: +over range 0010: -over range 0100: Burnout 1000: Invalid data Error code: 01H, 02H, 03
10109 10110 10111 10112	02	R	CH1 alarm 1 activated CH1 alarm 2 activated CH1 alarm 3 activated CH1 alarm 4 activated	0: Not activated 1: Alarm activated Error code: 01H, 02H, 03
10117 10118	02	R	CH2 status 1	Status expression in 2 bits 00: Measured data 01: Calculated data Error code: 01H, 02H, 03H
10121 10122 10123 10124	02	R	CH2 status 2	Status expression in 4 bits 0000: Normal data 0001: +over range 0010: -over range 0100: Burnout 1000: Invalid data Error code: 01H, 02H, 03
10125 10126 10127 10128	02	R	CH2 alarm 1 activated CH2 alarm 2 activated CH2 alarm 3 activated CH2 alarm 4 activated	0: Not activated 1: Alarm activated Error code: 01H, 02H, 03
10133 10134	02	R	CH3 status 1	Status expression in 2 bits 00: Measured data 01: Calculated data Error code: 01H, 02H, 03H
10137 10138 10139 10140	02	R	CH3 status 2	Status expression in 4 bits 0000: Normal data 0001: +over range 0010: -over range 0100: Burnout 1000: Invalid data Error code: 01H, 02H, 03
10141 10142 10143 10144	02	R	CH3 alarm 1 activated CH3 alarm 2 activated CH3 alarm 3 activated CH3 alarm 4 activated	0: Not activated 1: Alarm activated Error code: 01H, 02H, 03
10149 ~ 10160	02	R	From CH4 event level 1 to CH4 event level 4 activated	Same as CH1
10165 ~ 10176	02	R	From CH5 event level 1 to CH5 event level 4 activated	Same as CH1
10181 ~ 10192	02	R	From CH6 event level 1 to CH6 event level 4 activated	Same as CH1

Reference number	Applied function code	R/W	Content	Detail
10197 ~ 10208	02	R	From CH7 event level 1 to CH7 event level 4 activated	Same as CH1
10213 ~ 10224	02	R	From CH8 event level 1 to CH8 event level 4 activated	Same as CH1
10229 ~ 10240	02	R	From CH9 event level 1 to CH9 event level 4 activated	Same as CH1
10245 ~ 10256	02	R	From CH10 event level 1 to CH10 event level 4 activated	Same as CH1
10261 ~ 10272	02	R	From CH11 event level 1 to CH11 event level 4 activated	Same as CH1
10277 ~ 10288	02	R	From CH12 event level 1 to CH12 event level 4 activated	Same as CH1
10293 ~ 10304	02	R	From CH13 event level 1 to CH13 event level 4 activated	Same as CH1
10309 ~ 10320	02	R	From CH14 event level 1 to CH14 event level 4 activated	Same as CH1
10325 ~ 10336	02	R	From CH15 event level 1 to CH15 event level 4 activated	Same as CH1
10341 ~ 10352	02	R	From CH16 event level 1 to CH16 event level 4 activated	Same as CH1
10357 ~ 10368	02	R	From CH17 event level 1 to CH17 event level 4 activated	Same as CH1
10373 ~ 10384	02	R	From CH18 event level 1 to CH18 event level 4 activated	Same as CH1
10389 ~ 10400	02	R	From CH19 event level 1 to CH19 event level 4 activated	Same as CH1
10405 ~ 10416	02	R	From CH20 event level 1 to CH20 event level 4 activated	Same as CH1
10421 ~ 10432	02	R	From CH21 event level 1 to CH21 event level 4 activated	Same as CH1
10437 ~ 10448	02	R	From CH22 event level 1 to CH22 event level 4 activated	Same as CH1
10453 ~ 10464	02	R	From CH23 event level 1 to CH23 event level 4 activated	Same as CH1
10469 ~ 10480	02	R	From CH24 event level 1 to CH24 event level 4 activated	Same as CH1
10485 ~ 10496	02	R	From CH25 event level 1 to CH25 event level 4 activated	Same as CH1
10501 ~ 10512	02	R	From CH26 event level 1 to CH26 event level 4 activated	Same as CH1
10517 ~ 10528	02	R	From CH27 event level 1 to CH27 event level 4 activated	Same as CH1
10533 ~ 10544	02	R	From CH28 event level 1 to CH28 event level 4 activated	Same as CH1
10549 ~ 10560	02	R	From CH29 event level 1 to CH29 event level 4 activated	Same as CH1

Reference number	Applied function code	R/W	Content	Detail
10565 ~ 10576	02	R	From CH30 event level 1 to CH30 event level 4 activated	Same as CH1
10581 ~ 10592	02	R	From CH31 event level 1 to CH31 event level 4 activated	Same as CH1
10597 ~ 10608	02	R	From CH32 event level 1 to CH32 event level 4 activated	Same as CH1
10613 ~ 10624	02	R	From CH33 event level 1 to CH33 event level 4 activated	Same as CH1
10629 ~ 10640	02	R	From CH34 event level 1 to CH34 event level 4 activated	Same as CH1
10645 ~ 10656	02	R	From CH35 event level 1 to CH35 event level 4 activated	Same as CH1
10661 ~ 10672	02	R	From CH36 event level 1 to CH36 event level 4 activated	Same as CH1
10677 ~ 10688	02	R	From CH37 event level 1 to CH37 event level 4 activated	Same as CH1
10693 ~ 10704	02	R	From CH38 event level 1 to CH38 event level 4 activated	Same as CH1
10709 ~ 10720	02	R	From CH39 event level 1 to CH39 event level 4 activated	Same as CH1
10725 ~ 10736	02	R	From CH40 event level 1 to CH40 event level 4 activated	Same as CH1
10741 ~ 10752	02	R	From CH41 event level 1 to CH41 event level 4 activated	Same as CH1
10757 ~ 10768	02	R	From CH42 event level 1 to CH42 event level 4 activated	Same as CH1
10773 ~ 10784	02	R	From CH43 event level 1 to CH43 event level 4 activated	Same as CH1
10789 ~ 10800	02	R	From CH44 event level 1 to CH44 event level 4 activated	Same as CH1

### 5.7.3 Analog input data

#### 1) Reading of instrument specifications

R/W ... R: READ, W: WRITE

Reference number	Applied function code	R/W	Content	Detail
30001	04	R	Instrument name character 1, 2	ASCII "KR"
30002	04	R	Instrument name character 3, 4	ASCII "21"
30003	04	R	Instrument name character 5, 6	ASCII "60": 6 points, "20": 12 points
30009	04	R	ROM version character 1, 2	ASCII 2 digits
30010	04	R	ROM version character 3, 4	ASCII 2 digits
30011	04	R	ROM version character 5, 6	ASCII 2 digits
30012	04	R	ROM version character 7, 8	ASCII 2 digits
30017	04	R	Input point	6: 6 points, 12: 12 points
30025	04	R	Alarm output point	12: 12 points, 8: 8 points, 6: 6 points, 4: 4 points, 0: None
30026	04	R	External contact	Optional external contact Enable: 1, Disable: 0
30079	04	R	Serial number 1, 2	ASCII 2 digits
30080	04	R	Serial number 3, 4	ASCII 2 digits
30081	04	R	Serial number 5, 6	ASCII 2 digits
30082	04	R	Serial number 7, 8	ASCII 2 digits
30083	04	R	Serial number 9, 10	ASCII 2 digits
30084	04	R	Serial number 11, 12	ASCII 2 digits
30085	04	R	Serial number 13, 14	ASCII 2 digits
30086	04	R	Serial number 15, 16	ASCII 2 digits
30087	04	R	Built date 1, 2	ASCII 2 digits
30088	04	R	Built date 3, 4	ASCII 2 digits
30089	04	R	Built date 5, 6	ASCII 2 digits
30090	04	R	Built date 7, 8	ASCII 2 digits
30091	04	R	MAC address 1, 2	MAC address 1, 2
30092	04	R	MAC address 3, 4	MAC address 3, 4
30093	04	R	MAC address 5, 6	MAC address 5, 6

2) Reading of measured data

R/W ... R: READ, W: WRITE

Reference number	Applied function code	R/W	Content	Detail
30101	04	R	CH1 Measured data	DATA: -30000 ~ 30000 32767: High limit over flow -32767: Low limit over flow 32765: RJ error 32766: Burnout -32765: Invalid data 32764: Calculation error Error code: 01H, 02H, 03H, 12H
30102	04	R	CH1 decimal point/status	Data status, event status, decimal point (discussed later) Error code: 01H, 02H, 03H, 12H
30103	04	R	CH2 measured data	Same as CH1
30104	04	R	CH2 decimal point/status	Same as CH1
30105	04	R	CH3 measured data	Same as CH1
30106	04	R	CH3 decimal point/status	Same as CH1
30107	04	R	CH4 measured data	Same as CH1
30108	04	R	CH4 decimal point/status	Same as CH1
30109	04	R	CH5 measured data	Same as CH1
30110	04	R	CH5 decimal point/status	Same as CH1
30111	04	R	CH6 measured data	Same as CH1
30112	04	R	CH6 decimal point/status	Same as CH1
30113	04	R	CH7 measured data	Same as CH1
30114	04	R	CH7 decimal point/status	Same as CH1
30115	04	R	CH8 measured data	Same as CH1
30116	04	R	CH8 decimal point/status	Same as CH1
30117	04	R	CH9 measured data	Same as CH1
30118	04	R	CH9 decimal point/status	Same as CH1
30119	04	R	CH10 measured data	Same as CH1
30120	04	R	CH10 decimal point/status	Same as CH1
30121	04	R	CH11 measured data	Same as CH1
30122	04	R	CH11 decimal point/status	Same as CH1
30123	04	R	CH12 measured data	Same as CH1
30124	04	R	CH12 decimal point/status	Same as CH1
30125	04	R	CH13 measured data	Same as CH1
30126	04	R	CH13 decimal point/status	Same as CH1
30127	04	R	CH14 measured data	Same as CH1
30128	04	R	CH14 decimal point/status	Same as CH1
30129	04	R	CH15 measured data	Same as CH1
30130	04	R	CH15 decimal point/status	Same as CH1
30131	04	R	CH16 measured data	Same as CH1
30132	04	R	CH16 decimal point/status	Same as CH1
30133	04	R	CH17 measured data	Same as CH1
30134	04	R	CH17 decimal point/status	Same as CH1
30135	04	R	CH18 measured data	Same as CH1
30136	04	R	CH18 decimal point/status	Same as CH1
30137	04	R	CH19 measured data	Same as CH1

Reference number	Applied function code	R/W	Content	Detail
30138	04	R	CH19 decimal point/status	Same as CH1
30139	04	R	CH20 measured data	Same as CH1
30140	04	R	CH20 decimal point/status	Same as CH1
30141	04	R	CH21 measured data	Same as CH1
30142	04	R	CH21 decimal point/status	Same as CH1
30143	04	R	CH22 measured data	Same as CH1
30144	04	R	CH22 decimal point/status	Same as CH1
30145	04	R	CH23 measured data	Same as CH1
30146	04	R	CH23 decimal point/status	Same as CH1
30147	04	R	CH24 measured data	Same as CH1
30148	04	R	CH24 decimal point/status	Same as CH1
30149	04	R	CH25 measured data	Same as CH1
30150	04	R	CH25 decimal point/status	Same as CH1
30151	04	R	CH26 measured data	Same as CH1
30152	04	R	CH26 decimal point/status	Same as CH1
30153	04	R	CH27 measured data	Same as CH1
30154	04	R	CH27 decimal point/status	Same as CH1
30155	04	R	CH28 measured data	Same as CH1
30156	04	R	CH28 decimal point/status	Same as CH1
30157	04	R	CH29 measured data	Same as CH1
30158	04	R	CH29 decimal point/status	Same as CH1
30159	04	R	CH30 measured data	Same as CH1
30160	04	R	CH30 decimal point/status	Same as CH1
30161	04	R	CH31 measured data	Same as CH1
30162	04	R	CH31 decimal point/status	Same as CH1
30163	04	R	CH32 measured data	Same as CH1
30164	04	R	CH32 decimal point/status	Same as CH1
30165	04	R	CH33 measured data	Same as CH1
30166	04	R	CH33 decimal point/status	Same as CH1
30167	04	R	CH34 measured data	Same as CH1
30168	04	R	CH34 decimal point/status	Same as CH1
30169	04	R	CH35 measured data	Same as CH1
30170	04	R	CH35 decimal point/status	Same as CH1
30171	04	R	CH36 measured data	Same as CH1
30172	04	R	CH36 decimal point/status	Same as CH1
30173	04	R	CH37 measured data	Same as CH1
30174	04	R	CH37 decimal point/status	Same as CH1
30175	04	R	CH38 measured data	Same as CH1
30176	04	R	CH38 decimal point/status	Same as CH1
30177	04	R	CH39 measured data	Same as CH1
30178	04	R	CH39 decimal point/status	Same as CH1
30179	04	R	CH40 measured data	Same as CH1
30180	04	R	CH40 decimal point/status	Same as CH1
30181	04	R	CH41 measured data	Same as CH1
30182	04	R	CH41 decimal point/status	Same as CH1

Reference number	Applied function code	R/W	Content	Detail			
30183	04	R	CH42 measured data	Same as CH1			
30184	04	R	CH42 decimal point/status	Same as CH1			
30185	04	R	CH43 measured data	Same as CH1			
30186	04	R	CH43 decimal point/status	Same as CH1			
30187	04	R	CH44 measured data	Same as CH1			
30188	04	R	CH44 decimal point/status	Same as CH1			

\* About the decimal point/status information

MSB(15)	0	0	0	0	(11)	EV4	EV3	EV2	EV1	ERR	BURN	OF	(4)	(3)	LSB(0)

EV1 ~ 4	: Each alarm status	0 (Not activated)/1 (activated)
ERR	: Input part status	0 (normal)/1 (abnormal)
BURN	: Sensor disconnection	0 (Not activated)/1 (activated)
OF	: Overflow error	0 (Not activated)/1 (activated)
UF	: Underflow error	0 (Not activated)/1 (activated)
DP	: Data decimal place	0 0 0 0 : 0,  0 0 0 1 : 1,  0 0 1 0 : 2  0 0 1 1 : 3

## 5.7.4 Analog setting values

### 1) Common parameters (Date/time, upper communications, etc.)

Reference number	Applied function code	R/W	Content	Detail
40001	03	R	Date/time setting 1, 2	Year, ASCII 2 digits
	06	W		00: Year 2000 ~ 99: Year 2099
	16	W		Error code: 01H, 02H, 03H, 11H, 12H
40002	03	R	Date/time setting 3, 4	Month, ASCII 2 digits
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40003	03	R	Date/time setting 5, 6	Day, ASCII 2 digits
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40004	03	R	Date/time setting 7, 8	Hour, ASCII 2 digits
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40005	03	R	Date/time setting 9, 10	Minute, ASCII 2 digits
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40006	03	R	Date/time setting 11, 12	Second, ASCII 2 digits
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40031	03	R	Upper transmission mode	0: RTU mode, 1: ASCII mode
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40032	03	R	Upper instrument address	1 ~ 31
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40033	03	R	Upper transmission speed	3: 9600bps, 4: 19200bps
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40034	03	R	Upper transmission character	0: 8N1, 1: 8N2, 2: 8E1, 3: 8E2, 4: 8O1,
	06	W		5: 8O2, 6: 7E1, 7: 7E2, 8: 7O1, 9: 7O2
	16	W		Error code: 01H, 02H, 03H, 11H, 12H
40072	03	R	Decimal point mark	0: Dot, 1: Comma
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40073	03	R	Frequency selection	1: 50Hz, 2: 60Hz
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40074	03	R	Filter level	0 ~ 3
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		
40075	03	R	Number of using loop	1 ~ 5
	06	W		Error code: 01H, 02H, 03H, 11H, 12H
	16	W		

Reference number	Applied function code	R/W	Content	Detail
40081	03	R	Calculation reset/ Automatic reset ON/OFF	0: OFF, 1: ON Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40082	03	R	Calculation reset/ at reference	ASCII 2 digits, 00 ~ 23 Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40083	03	R	Calculation reset/ for reference	ASCII 2 digits, 00 ~ 59 Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40084	03	R	Calculation reset/ at interval	ASCII 2 digits, 00 ~ 23 Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40085	03	R	Calculation reset/ for interval	ASCII 2 digits, 00 ~ 59 Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40091	03	R	Instrument name 1, 2	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40092	03	R	Instrument name 3, 4	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40093	03	R	Instrument name 5, 6	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40094	03	R	Instrument name 7, 8	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40095	03	R	Instrument name 9, 10	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40096	03	R	Instrument name 11, 12	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40097	03	R	Instrument name 13, 14	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		
40098	03	R	Instrument name 15, 16	ASCII 2 characters, Shift JIS 1 character Error code: 01H, 02H, 03H, 11H, 12H
	06	W		
	16	W		

2) Setting parameters for each channel

(Note) Writing of multiple setting values across channels becomes an error. (Error code 12H)

R/W ... R: READ, W: WRITE

Reference number	Applied function code	R/W	Content	Detail
40102	03 06 16	R W W	CH1 range number	ASCII code 2 digits (A space code can be used in the first digit.) CH1 ~ CH12: 01(13.80mV) ~ 80(Pt-Co) CH13 ~ : 10 (-10.00 ~ 10.00V) fixed For the optional DI added CH37 ~ CH42: 90 (DI) ~ 92 (pulse (-)) Error code: 01H, 02H, 03H, 09H, 11H, 12H
40103	03 06 16	R W W	CH1 RJ	0: External, 1: Internal * For other than thermocouple inputs “0: External” fixed Error code: 01H, 02H, 03H, 09H, 11H, 12H
40104	03 06 16	R W W	CH1 range low limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40105	03 06 16	R W W	CH1 range high limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40106	03 06 16	R W W	CH1 range decimal point	Range decimal place 0 ~ 3 * Same decimal place for range high/low limits values Error code: 01H, 02H, 03H, 09H, 11H, 12H
40107	03 06 16	R W W	CH1 scale low limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40108	03 06 16	R W W	CH1 scale high limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40109	03 06 16	R W W	CH1 scale decimal point	Scale decimal place 0 ~ 3 * Same decimal place for scale high/low limits values Error code: 01H, 02H, 03H, 09H, 11H, 12H
40110	03 06 16	R W W	CH1 burnout	0: Disable 1: Up scale, 2: Down scale Error code: 01H, 02H, 03H, 09H, 11H, 12H
40111	03 06 16	R W W	CH1 sensor correction	-30000 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40112	03 06 16	R W W	CH1 display color	12 colors 1: Red, 2: Blue, 3: Green, 4: Brown, 5: Purple, 6: Orange, 7: Gray, 8: Light blue, 9: Yellow-green, 10: Yellow, 11: Pink, 12: Dark blue Error code: 01H, 02H, 03H, 09H, 11H, 12H
40119	03 06 16	R W W	CH1 unit 1, 2	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
40120	03 06 16	R W W	CH1 unit 3, 4	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40121	03 06 16	R W W	CH1 unit 5, 6	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40122	03 06 16	R W W	CH1 unit 7	ASCII 1 digit, Low 1 byte - 00H fixed Error code: 01H, 02H, 03H, 09H, 11H, 12H
40125	03 06 16	R W W	CH1 tag 1, 2	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40126	03 06 16	R W W	CH1 tag 3, 4	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40127	03 06 16	R W W	CH1 tag 5, 6	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40128	03 06 16	R W W	CH1 tag 7, 8	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40129	03 06 16	R W W	CH1 tag 9, 10	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40130	03 06 16	R W W	CH1 tag 11, 12	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40131	03 06 16	R W W	CH1 tag 13, 14	ASCII, Shift JIS 2 digit Error code: 01H, 02H, 03H, 09H, 11H, 12H
40132	03 06 16	R W W	CH1 tag 15	ASCII 1 digit, Low 1 byte - 00H fixed Error code: 01H, 02H, 03H, 09H, 11H, 12H
40133	03 06 16	R W W	CH1 alarm type 1	0: Disable, 1: High limit, 2: Low limit, 5: Difference high limit, 6: Difference low limit, 7: Abnormal data Error code: 01H, 02H, 03H, 09H, 11H, 12H
40134	03 06 16	R W W	CH1 setting value 1	-30000 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40135	03 06 16	R W W	CH1 output relay 1	ASCII 2 digits 01 ~ Alarm output point, 00H: No setting Error code: 01H, 02H, 03H, 09H, 11H, 12H
40136	03 06 16	R W W	CH1 AND/OR 1	0: OR, 1: AND Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
40137	03 06 16	R W W	CH1 reference channel 1	ASCII 2 digits Reference channel at difference alarm No. 01 ~ 44 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40139	03 06 16	R W W	CH1 dead band 1	0 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40140	03 06 16	R W W	CH1 alarm delay 1	0 ~ 3600 seconds Error code: 01H, 02H, 03H, 09H, 11H, 12H
40141	03 06 16	R W W	CH1 alarm type 2	0: Disable, 1: high limit, 2: Low limit, 5: Difference high limit, 6: Difference low limit, 7: Abnormal data Error code: 01H, 02H, 03H, 09H, 11H, 12H
40142	03 06 16	R W W	CH1 setting value 2	-30000 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40143	03 06 16	R W W	CH1 output relay 2	ASCII 2 digits 01 ~ Alarm output point, 00H: No setting Error code: 01H, 02H, 03H, 09H, 11H, 12H
40144	03 06 16	R W W	CH1 AND/OR 2	0:OR, 1: AND Error code: 01H, 02H, 03H, 09H, 11H, 12H
40145	03 06 16	R W W	CH1 reference channel 2	ASCII 2 digits Reference channel at difference alarm No. 01 ~ 44 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40147	03 06 16	R W W	CH1 dead band 2	0 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40148	03 06 16	R W W	CH1 alarm delay 2	0 ~ 3600 seconds Error code: 01H, 02H, 03H, 09H, 11H, 12H
40149	03 06 16	R W W	CH1 alarm type 3	0: Disable, 1: high limit, 2: Low limit, 5: Difference high limit, 6: Difference low limit, 7: Abnormal data Error code: 01H, 02H, 03H, 09H, 11H, 12H
40150	03 06 16	R W W	CH1 setting value 3	-30000 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40151	03 06 16	R W W	CH1 output relay 3	ASCII 2 digits 01 ~ Alarm output point, 00H: No setting Error code: 01H, 02H, 03H, 09H, 11H, 12H
40152	03 06 16	R W W	CH1 AND/OR 3	0:OR, 1: AND Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
40153	03 06 16	R W W	CH1 reference channel 3	ASCII2 行 Reference channel at difference alarm No. 01 ~ 44 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40155	03 06 16	R W W	CH1 dead band 3	0 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40156	03 06 16	R W W	CH1 alarm delay 3	0 ~ 3600 seconds Error code: 01H, 02H, 03H, 09H, 11H, 12H
40157	03 06 16	R W W	CH1 alarm type 4	0: Disable, 1: high limit, 2: Low limit, 5: Difference high limit, 6: Difference low limit, 7: Abnormal data Error code: 01H, 02H, 03H, 09H, 11H, 12H
40158	03 06 16	R W W	CH1 setting value 4	-30000 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40159	03 06 16	R W W	CH1 output relay 4	ASCII 2 digits 01 ~ Alarm output point, 00H: No setting Error code: 01H, 02H, 03H, 09H, 11H, 12H
40160	03 06 16	R W W	CH1 AND/OR 4	0:OR, 1: AND Error code: 01H, 02H, 03H, 09H, 11H, 12H
40161	03 06 16	R W W	CH1 reference channel 4	ASCII 2 digits Reference channel at difference alarm No. 01 ~ 44 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40163	03 06 16	R W W	CH1 dead band 4	0 ~ 30000 * The scale decimal point is used for the decimal place. Error code: 01H, 02H, 03H, 09H, 11H, 12H
40164	03 06 16	R W W	CH1 alarm delay 4	0 ~ 3600 seconds Error code: 01H, 02H, 03H, 09H, 11H, 12H
40166	03 06 16	R W W	CH1 display scale low limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40167	03 06 16	R W W	CH1 display scale high limit	-30000 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40168	03 06 16	R W W	CH1 display scale decimal point	0 ~ 3 Error code: 01H, 02H, 03H, 09H, 11H, 12H
40169	03 06 16	R W W	CH1 display scale type	0: Standard, 1: Logarithm Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
40171	03 06 16	R W W	CH1 range position (Area belonged)	0 ~ 3, At parallel scale 0 ~ 7 (0 ~ 3: First zone, 4 ~ 7: Second zone) Error code: 01H, 02H, 03H, 09H, 11H, 12H
40176	03 06 16	R W W	Calculation ON/OFF	0: Not used, 1: Used Error code: 01H, 02H, 03H, 09H, 11H, 12H
40177	03 06 16	R W W	CH1 calculation formula 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40178	03 06 16	R W W	CH1 calculation formula 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40179	03 06 16	R W W	CH1 calculation formula 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40180	03 06 16	R W W	CH1 calculation formula 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40181	03 06 16	R W W	CH1 calculation formula 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40182	03 06 16	R W W	CH1 calculation formula 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40183	03 06 16	R W W	CH1 calculation formula 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40184	03 06 16	R W W	CH1 calculation formula 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40185	03 06 16	R W W	CH1 calculation formula 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40186	03 06 16	R W W	CH1 calculation formula 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40187	03 06 16	R W W	CH1 calculation formula 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40188	03 06 16	R W W	CH1 calculation formula 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40189	03 06 16	R W W	CH1 calculation formula 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40190	03 06 16	R W W	CH1 calculation formula 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
40191	03 06 16	R W W	CH1 calculation formula 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40192	03 06 16	R W W	CH1 calculation formula 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40193	03 06 16	R W W	CH1 calculation formula 33, 34	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40194	03 06 16	R W W	CH1 calculation formula 35, 36	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40195	03 06 16	R W W	CH1 calculation formula 37, 38	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40196	03 06 16	R W W	CH1 calculation formula 39, 40	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40197	03 06 16	R W W	CH1 calculation formula 41, 42	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40198	03 06 16	R W W	CH1 calculation formula 43, 44	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40199	03 06 16	R W W	CH1 calculation formula 45, 46	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40200	03 06 16	R W W	CH1 calculation formula 47, 48	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
40201 ~ 40300	03 06 16	R W W	CH2 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40301 ~ 40400	03 06 16	R W W	CH3 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40401 ~ 40500	03 06 16	R W W	CH4 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40501 ~ 40600	03 06 16	R W W	CH5 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40601 ~ 40700	03 06 16	R W W	CH6 setting parameter	Same as CH1 parameter (40102 ~ 40200)

Reference number	Applied function code	R/W	Content	Detail
40701 ~ 40800	03 06 16	R W W	CH7 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40801 ~ 40900	03 06 16	R W W	CH8 setting parameter	Same as CH1 parameter (40102 ~ 40200)
40901 ~ 41000	03 06 16	R W W	CH9 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41001 ~ 41100	03 06 16	R W W	CH10 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41101 ~ 41200	03 06 16	R W W	CH11 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41201 ~ 41300	03 06 16	R W W	CH12 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41301 ~ 41400	03 06 16	R W W	CH13 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41401 ~ 41500	03 06 16	R W W	CH14 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41501 ~ 41600	03 06 16	R W W	CH15 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41601 ~ 41700	03 06 16	R W W	CH16 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41701 ~ 41800	03 06 16	R W W	CH17 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41801 ~ 41900	03 06 16	R W W	CH18 setting parameter	Same as CH1 parameter (40102 ~ 40200)
41901 ~ 42000	03 06 16	R W W	CH19 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42001 ~ 42100	03 06 16	R W W	CH20 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42101 ~ 42200	03 06 16	R W W	CH21 setting parameter	Same as CH1 parameter (40102 ~ 40200)

Reference number	Applied function code	R/W	Content	Detail
42201 ~ 42300	03 06 16	R W W	CH22 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42301 ~ 42400	03 06 16	R W W	CH23 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42401 ~ 42500	03 06 16	R W W	CH24 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42501 ~ 42600	03 06 16	R W W	CH25 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42601 ~ 42700	03 06 16	R W W	CH26 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42701 ~ 42800	03 06 16	R W W	CH27 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42801 ~ 42900	03 06 16	R W W	CH28 setting parameter	Same as CH1 parameter (40102 ~ 40200)
42901 ~ 43000	03 06 16	R W W	CH29 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43001 ~ 43100	03 06 16	R W W	CH30 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43101 ~ 43200	03 06 16	R W W	CH31 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43201 ~ 43300	03 06 16	R W W	CH32 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43301 ~ 43400	03 06 16	R W W	CH33 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43401 ~ 43500	03 06 16	R W W	CH34 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43501 ~ 43600	03 06 16	R W W	CH35 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43601 ~ 43700	03 06 16	R W W	CH36 setting parameter	Same as CH1 parameter (40102 ~ 40200)

Reference number	Applied function code	R/W	Content	Detail
43701 ~ 43800	03 06 16	R W W	CH37 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43801 ~ 43900	03 06 16	R W W	CH38 setting parameter	Same as CH1 parameter (40102 ~ 40200)
43901 ~ 44000	03 06 16	R W W	CH39 setting parameter	Same as CH1 parameter (40102 ~ 40200)
44001 ~ 44100	03 06 16	R W W	CH40 setting parameter	Same as CH1 parameter (40102 ~ 40200)
44101 ~ 44200	03 06 16	R W W	CH41 setting parameter	Same as CH1 parameter (40102 ~ 40200)
44201 ~ 44300	03 06 16	R W W	CH42 setting parameter	Same as CH1 parameter (40102 ~ 40200)
44301 ~ 44400	03 06 16	R W W	CH43 setting parameter	Same as CH1 parameter (40102 ~ 40200)
44401 ~ 44500	03 06 16	R W W	CH44 setting parameter	Same as CH1 parameter (40102 ~ 40200)

3) Communications parameter

Reference number	Applied function code	R/W	Content	Detail
45001	03 06 16	R W W	IP address 1, 2	IP address Error code: 01H, 02H, 03H, 09H, 11H, 12H
45002	03 06 16	R W W	IP address 3, 4	IP address Error code: 01H, 02H, 03H, 09H, 11H, 12H
45003	03 06 16	R W W	Subnet mask1, 2	Subnet mask Error code: 01H, 02H, 03H, 09H, 11H, 12H
45004	03 06 16	R W W	Subnet mask 3, 4	Subnet mask Error code: 01H, 02H, 03H, 09H, 11H, 12H
45005	03 06 16	R W W	Default gateway 1, 2	Default gateway Error code: 01H, 02H, 03H, 09H, 11H, 12H
45006	03 06 16	R W W	Default gateway 3, 4	Default gateway Error code: 01H, 02H, 03H, 09H, 11H, 12H
45070	03 06 16	R W W	FTP server ON/OFF	0: OFF, 1: ON Error code: 01H, 02H, 03H, 09H, 11H, 12H
45071	03 06 16	R W W	FTP server address 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45072	03 06 16	R W W	FTP server address 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45073	03 06 16	R W W	FTP server address 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45074	03 06 16	R W W	FTP server address 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45075	03 06 16	R W W	FTP server address 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45076	03 06 16	R W W	FTP server address 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45077	03 06 16	R W W	FTP server address 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45078	03 06 16	R W W	FTP server address 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45079	03 06 16	R W W	FTP server address 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45080	03 06 16	R W W	FTP server address 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45081	03 06 16	R W W	FTP server address 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45082	03 06 16	R W W	FTP server address 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45083	03 06 16	R W W	FTP server address 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45084	03 06 16	R W W	FTP server address 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45085	03 06 16	R W W	FTP server address 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45086	03 06 16	R W W	FTP server address 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45091	03 06 16	R W W	Login user name (for server) 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45092	03 06 16	R W W	Login user name (for server) 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45093	03 06 16	R W W	Login user name (for server) 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45094	03 06 16	R W W	Login user name (for server) 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45095	03 06 16	R W W	Login user name (for server) 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45096	03 06 16	R W W	Login user name (for server) 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45097	03 06 16	R W W	Login user name (for server) 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45098	03 06 16	R W W	Login user name (for server) 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45099	03 06 16	R W W	Login user name (for server) 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45100	03 06 16	R W W	Login user name (for server) 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45101	03 06 16	R W W	Login user name (for server) 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45102	03 06 16	R W W	Login user name (for server) 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45103	03 06 16	R W W	Login user name (for server) 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45104	03 06 16	R W W	Login user name (for server) 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45105	03 06 16	R W W	Login user name (for server) 29,30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45106	03 06 16	R W W	Login user name (for server) 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45111	03 06 16	R W W	Login password (for server) 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45112	03 06 16	R W W	Login password (for server) 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45113	03 06 16	R W W	Login password (for server) 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45114	03 06 16	R W W	Login password (for server) 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45115	03 06 16	R W W	Login password (for server) 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45116	03 06 16	R W W	Login password (for server) 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45117	03 06 16	R W W	Login password (for server) 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45118	03 06 16	R W W	Login password (for server) 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45119	03 06 16	R W W	Login password (for server) 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45120	03 06 16	R W W	Login password (for server) 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45121	03 06 16	R W W	Login password (for server) 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45122	03 06 16	R W W	Login password (for server) 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45123	03 06 16	R W W	Login password (for server) 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45124	03 06 16	R W W	Login password (for server) 27,28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45125	03 06 16	R W W	Login password (for server) 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45126	03 06 16	R W W	Login password (for server) 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45141	03 06 16	R W W	E-mail transfer condition 1 Condition type selection/Transfer address number	Higher 1 byte Condition type selection 0: Disable, 1: At alarm activated, 2: At fixed time Lower 1 byte Transfer address number: Bit correspondence Bit 0 ~ 7 → Address 1 ~ 8
45142	03 06 16	R W W	E-mail transfer condition 1 Alarm channel starting/ending numbers	Higher 1 byte Starting channel number: 1 ~ 44 Lower 1 byte Ending channel number: 1 ~ 44 Error code: 01H, 02H, 03H, 09H, 11H, 12H
45143	03 06 16	R W W	E-mail transfer condition 1 Reference hour/minute	Higher 1 byte At reference: 0 ~ 23 Lower 1 byte For reference: 0 ~ 59 00:00 ~ 23:59 Error code: 01H, 02H, 03H, 09H, 11H, 12H
45144	03 06 16	R W W	E-mail transfer condition 1 Interval hour/minute	Higher 1 byte At interval: 0 ~ 24 Lower 1 byte For interval: 0 ~ 59 00:00 ~ 24:00 Error code: 01H, 02H, 03H, 09H, 11H, 12H
45145 ~ 45148	03 06 16	R W W	E-mail transfer condition 2	Same as E-mail transfer condition 1 (45141 ~ 45144)
45149 ~ 45152	03 06 16	R W W	E-mail transfer condition 3	Same as E-mail transfer condition 1 (45141 ~ 45144)

Reference number	Applied function code	R/W	Content	Detail
45153 ~ 45156	03 06 16	R W W	E-mail transfer condition 4	Same as E-mail transfer condition 1 (45141 ~ 45144)
45157 ~ 45160	03 06 16	R W W	E-mail transfer condition 5	Same as E-mail transfer condition 1 (45141 ~ 45144)
45161 ~ 45164	03 06 16	R W W	E-mail transfer condition 6	Same as E-mail transfer condition 1 (45141 ~ 45144)
45165 ~ 45168	03 06 16	R W W	E-mail transfer condition 7	Same as E-mail transfer condition 1 (45141 ~ 45144)
45169 ~ 45172	03 06 16	R W W	E-mail transfer condition 8	Same as E-mail transfer condition 1 (45141 ~ 45144)
45181	03 06 16	R W W	E-mail transfer address 1 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45182	03 06 16	R W W	E-mail transfer address 1 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45183	03 06 16	R W W	E-mail transfer address 1 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45184	03 06 16	R W W	E-mail transfer address 1 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45185	03 06 16	R W W	E-mail transfer address 1 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45186	03 06 16	R W W	E-mail transfer address 1 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45187	03 06 16	R W W	E-mail transfer address 1 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45188	03 06 16	R W W	E-mail transfer address 1 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45189	03 06 16	R W W	E-mail transfer address 1 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45190	03 06 16	R W W	E-mail transfer address 1 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45191	03 06 16	R W W	E-mail transfer address 1 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45192	03 06 16	R W W	E-mail transfer address 1 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45193	03 06 16	R W W	E-mail transfer address 1 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45194	03 06 16	R W W	E-mail transfer address 1 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45195	03 06 16	R W W	E-mail transfer address 1 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45196	03 06 16	R W W	E-mail transfer address 1 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45197 ~ 45212	03 06 16	R W W	E-mail transfer address 2	Same as E-mail address 1 (45181 ~ 45196)
45213 ~ 45228	03 06 16	R W W	E-mail transfer address 3	Same as E-mail address 1 (45181 ~ 45196)
45229 ~ 45244	03 06 16	R W W	E-mail transfer address 4	Same as E-mail address 1 (45181 ~ 45196)
45245 ~ 45260	03 06 16	R W W	E-mail transfer address 5	Same as E-mail address 1 (45181 ~ 45196)
45261 ~ 45276	03 06 16	R W W	E-mail transfer address 6	Same as E-mail address 1 (45181 ~ 45196)
45277 ~ 45292	03 06 16	R W W	E-mail transfer address 7	Same as E-mail address 1 (45181 ~ 45196)
45293 ~ 45308	03 06 16	R W W	E-mail transfer address 8	Same as E-mail address 1 (45181 ~ 45196)
45311	03 06 16	R W W	E-mail attached data CH1	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45312	03 06 16	R W W	E-mail attached data CH2	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45313	03 06 16	R W W	E-mail attached data CH3	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45314	03 06 16	R W W	E-mail attached data CH4	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45315	03 06 16	R W W	E-mail attached data CH5	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45316	03 06 16	R W W	E-mail attached data CH6	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45317	03 06 16	R W W	E-mail attached data CH7	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45318	03 06 16	R W W	E-mail attached data CH8	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45319	03 06 16	R W W	E-mail attached data CH9	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45320	03 06 16	R W W	E-mail attached data CH10	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45321	03 06 16	R W W	E-mail attached data CH11	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45322	03 06 16	R W W	E-mail attached data CH12	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45323	03 06 16	R W W	E-mail attached data CH13	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45324	03 06 16	R W W	E-mail attached data CH14	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45325	03 06 16	R W W	E-mail attached data CH15	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45326	03 06 16	R W W	E-mail attached data CH16	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45327	03 06 16	R W W	E-mail attached data CH17	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45328	03 06 16	R W W	E-mail attached data CH18	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45329	03 06 16	R W W	E-mail attached data CH19	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45330	03 06 16	R W W	E-mail attached data CH20	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45331	03 06 16	R W W	E-mail attached data CH21	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45332	03 06 16	R W W	E-mail attached data CH22	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45333	03 06 16	R W W	E-mail attached data CH23	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45334	03 06 16	R W W	E-mail attached data C24	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45335	03 06 16	R W W	E-mail attached data C25	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45336	03 06 16	R W W	E-mail attached data C26	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45337	03 06 16	R W W	E-mail attached data CH27	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45338	03 06 16	R W W	E-mail attached data CH28	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45339	03 06 16	R W W	E-mail attached data CH29	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45340	03 06 16	R W W	E-mail attached data CH30	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45341	03 06 16	R W W	E-mail attached data CH31	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45342	03 06 16	R W W	E-mail attached data CH32	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45343	03 06 16	R W W	E-mail attached data CH33	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45344	03 06 16	R W W	E-mail attached data CH34	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45345	03 06 16	R W W	E-mail attached data CH35	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45346	03 06 16	R W W	E-mail attached data CH36	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45347	03 06 16	R W W	E-mail attached data CH37	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45348	03 06 16	R W W	E-mail attached data CH38	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45349	03 06 16	R W W	E-mail attached data CH39	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45350	03 06 16	R W W	E-mail attached data CH40	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45351	03 06 16	R W W	E-mail attached data CH41	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45352	03 06 16	R W W	E-mail attached data CH42	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45353	03 06 16	R W W	E-mail attached data CH43	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45354	03 06 16	R W W	E-mail attached data CH44	Bit correspondence Bit 0: Address 1 ~ Bit 7: Address 8 0: Not attached, 1: Attached Error code: 01H, 02H, 03H, 09H, 11H, 12H
45361	03 06 16	R W W	POP3 address 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45362	03 06 16	R W W	POP3 address 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45363	03 06 16	R W W	POP3 address 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45364	03 06 16	R W W	POP3 address 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45365	03 06 16	R W W	POP3 address 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45366	03 06 16	R W W	POP3 address 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45367	03 06 16	R W W	POP3 address 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45368	03 06 16	R W W	POP3 address 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45369	03 06 16	R W W	POP3 address 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45370	03 06 16	R W W	POP3 address 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45371	03 06 16	R W W	POP3 address 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45372	03 06 16	R W W	POP3 address 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45373	03 06 16	R W W	POP3 address 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45374	03 06 16	R W W	POP3 address 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45375	03 06 16	R W W	POP3 address 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45376	03 06 16	R W W	POP3 address 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45381	03 06 16	R W W	SMTP address 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45382	03 06 16	R W W	SMTP address 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45383	03 06 16	R W W	SMTP address 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45384	03 06 16	R W W	SMTP address 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45385	03 06 16	R W W	SMTP address 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45386	03 06 16	R W W	SMTP address 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45387	03 06 16	R W W	SMTP address 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45388	03 06 16	R W W	SMTP address 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45389	03 06 16	R W W	SMTP address 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45390	03 06 16	R W W	SMTP address 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45391	03 06 16	R W W	SMTP address 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45392	03 06 16	R W W	SMTP address 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45393	03 06 16	R W W	SMTP address 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45394	03 06 16	R W W	SMTP address 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45395	03 06 16	R W W	SMTP address 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45396	03 06 16	R W W	SMTP address 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45401	03 06 16	R W W	Sender address 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45402	03 06 16	R W W	Sender address 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45403	03 06 16	R W W	Sender address 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45404	03 06 16	R W W	Sender address 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45405	03 06 16	R W W	Sender address 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45406	03 06 16	R W W	Sender address 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45407	03 06 16	R W W	Sender address 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45408	03 06 16	R W W	Sender address 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45409	03 06 16	R W W	Sender address 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45410	03 06 16	R W W	Sender address 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45411	03 06 16	R W W	Sender address 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45412	03 06 16	R W W	Sender address 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45413	03 06 16	R W W	Sender address 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45414	03 06 16	R W W	Sender address 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45415	03 06 16	R W W	Sender address 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45416	03 06 16	R W W	Sender address 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45421	03 06 16	R W W	Mail account 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45422	03 06 16	R W W	Mail account 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45423	03 06 16	R W W	Mail account 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45424	03 06 16	R W W	Mail account 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45425	03 06 16	R W W	Mail account 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45426	03 06 16	R W W	Mail account 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45427	03 06 16	R W W	Mail account 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45428	03 06 16	R W W	Mail account 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45429	03 06 16	R W W	Mail account 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45430	03 06 16	R W W	Mail account 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45431	03 06 16	R W W	Mail account 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45432	03 06 16	R W W	Mail account 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45433	03 06 16	R W W	Mail account 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45434	03 06 16	R W W	Mail account 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45435	03 06 16	R W W	Mail account 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45436	03 06 16	R W W	Mail account 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45441	03 06 16	R W W	Mail password 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45442	03 06 16	R W W	Mail password 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45443	03 06 16	R W W	Mail password 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45444	03 06 16	R W W	Mail password 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45445	03 06 16	R W W	Mail password 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45446	03 06 16	R W W	Mail password 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45447	03 06 16	R W W	Mail password 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45448	03 06 16	R W W	Mail password 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45449	03 06 16	R W W	Mail password 17, 18	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
45450	03 06 16	R W W	Mail password 19, 20	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45451	03 06 16	R W W	Mail password 21, 22	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45452	03 06 16	R W W	Mail password 23, 24	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45453	03 06 16	R W W	Mail password 25, 26	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45454	03 06 16	R W W	Mail password 27, 28	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45455	03 06 16	R W W	Mail password 29, 30	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45456	03 06 16	R W W	Mail password 31, 32	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45461	03 06 16	R W W	DNS On/Off	0: OFF, 1: ON Error code: 01H, 02H, 03H, 09H, 11H, 12H
45462	03 06 16	R W W	DNS primary server IP address 1, 2	Higher 16 bits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45463	03 06 16	R W W	DNS primary server IP address 3, 4	Higher 16 bits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45464	03 06 16	R W W	DNS secondary server IP address 1, 2	Higher 16 bits Error code: 01H, 02H, 03H, 09H, 11H, 12H
45465	03 06 16	R W W	DNS secondary server IP address 3, 4	Higher 16 bits Error code: 01H, 02H, 03H, 09H, 11H, 12H

4) Group parameter

Reference number	Applied function code	R/W	Content	Detail
46001	03 06 16	R W W	Group 1 Display group name 1, 2	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46002	03 06 16	R W W	Group 1 Display group name 3, 4	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46003	03 06 16	R W W	Group 1 Display group name 5, 6	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46004	03 06 16	R W W	Group 1 Display group name 7, 8	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46005	03 06 16	R W W	Group 1 Display group name 9, 10	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46006	03 06 16	R W W	Group 1 Display group name 11, 12	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46007	03 06 16	R W W	Group 1 Display group name 13, 14	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46008	03 06 16	R W W	Group 1 Display group name 15, 16	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
46011	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 1	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondisplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46012	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 2	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondisplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46013	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 3	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondisplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46014	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 4	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondisplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46015	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 5	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46016	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 6	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46017	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 7	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46018	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 8	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46019	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 9	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46020	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 10	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46021	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 11	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46022	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 12	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46023	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 13	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46024	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 14	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46025	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 15	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46026	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 16	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46027	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 17	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46028	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 18	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46029	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 19	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46030	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 20	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46031	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 21	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46032	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 22	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46033	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 23	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46034	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 24	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46035	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 25	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46036	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 26	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46037	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 27	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46038	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 28	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46039	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 29	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46040	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 30	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46041	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 31	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46042	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 32	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46043	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 33	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46044	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 34	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46045	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 35	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46046	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 36	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46047	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 37	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46048	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 38	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46049	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 39	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46050	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 40	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46051	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 41	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46052	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 42	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46053	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 43	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46054	03 06 16	R W W	Group 1 Display channel allocaton/Display_Nondisplay/Trend line diameter 44	Bit 0 ~ 7 Display channel allocation: 1 ~ 44 0: Not set Bit 8 ~ 9 Trend line diameter 0: 1, 1: 3, 2: 5 Bit 12 Display_Nondiplay 0: Nondisplay, 1: Display Error code: 01H, 02H, 03H, 09H, 11H, 12H
46061	03 06 16	R W W	Group 1 Trip line position 1	1 ~ 99 0: None Error code: 01H, 02H, 03H, 09H, 11H, 12H
46062	03 06 16	R W W	Group 1 Trip line color 1	1~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46063	03 06 16	R W W	Group 1 Trip line thickness 1	0: 1, 1: 3, 2: 5 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46064	03 06 16	R W W	Group 1 Trip line position 2	1 ~ 99 0: None Error code: 01H, 02H, 03H, 09H, 11H, 12H
46065	03 06 16	R W W	Group 1 Trip line color 2	1~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46066	03 06 16	R W W	Group 1 Trip line thickness 2	0: 1, 1: 3, 2: 5 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46067	03 06 16	R W W	Group 1 Trip line position 3	1 ~ 99 0: None Error code: 01H, 02H, 03H, 09H, 11H, 12H
46068	03 06 16	R W W	Group 1 Trip line color 3	1~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46069	03 06 16	R W W	Group 1 Trip line thickness 3	0: 1, 1: 3, 2: 5 Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
46070	03 06 16	R W W	Group 1 Trip line position 4	1 ~ 99 0: None Error code: 01H, 02H, 03H, 09H, 11H, 12H
46071	03 06 16	R W W	Group 1 Trip line color 4	1~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46072	03 06 16	R W W	Group 1 Trip line thickness 4	0: 1, 1: 3, 2: 5 Error code: 01H, 02H, 03H, 09H, 11H, 12H
46101 ~ 46200	03 06 16	R W W	Group 2 parameter	Same as Group 1 parameter (46001 ~ 46072)
46201 ~ 46300	03 06 16	R W W	Group 3 parameter	Same as Group 1 parameter (46001 ~ 46072)
46301 ~ 46400	03 06 16	R W W	Group 4 parameter	Same as Group 1 parameter (46001 ~ 46072)
46401 ~ 46500	03 06 16	R W W	Group 5 parameter	Same as Group 1 parameter (46001 ~ 46072)

5) Common parameter (screen, schedule, etc.)

Reference number	Applied function code	R/W	Content	Detail
47110	03 06 16	R W W	Language	0: Japanese, 1: English Error code: 01H, 02H, 03H, 09H, 11H, 12H
47111	03 06 16	R W W	Screen saver	0 ~ 60 (min.) Error code: 01H, 02H, 03H, 09H, 11H, 12H
47112	03 06 16	R W W	Year/month/day format	0: y/m/d, 1: m/d/y, 2: d/m/y Error code: 01H, 02H, 03H, 09H, 11H, 12H
47114	03 06 16	R W W	Background color	0: White, 1: Black Error code: 01H, 02H, 03H, 09H, 11H, 12H
47115	03 06 16	R W W	Display contrast adjustment	1 ~ 4 (Default: 3) Error code: 01H, 02H, 03H, 09H, 11H, 12H
47117	03 06 16	R W W	Combined display	0: W/o tag, 1: With tag, 2: Bargraph, 3: None Error code: 01H, 02H, 03H, 09H, 11H, 12H
47118	03 06 16	R W W	Trend direction	0: Vertical, 1: Horizontal Error code: 01H, 02H, 03H, 09H, 11H, 12H
47119	03 06 16	R W W	Bargraph direction	0: Vertical, 1: Horizontal Error code: 01H, 02H, 03H, 09H, 11H, 12H
47120	03 06 16	R W W	Number of frames for numeric number display screen	1, 4, 6, 12, 21, 44 switching Error code: 01H, 02H, 03H, 09H, 11H, 12H
47122	03 06 16	R W W	Zone used/not used	0: Not used, 1: Used Error code: 01H, 02H, 03H, 09H, 11H, 12H
47123	03 06 16	R W W	Automatic changing interval	0 ~ 60 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47124	03 06 16	R W W	Numeric number display update speed	0 ~ 2 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47125	03 06 16	R W W	Scale text	0: With display, 1: W/o display Error code: 01H, 02H, 03H, 09H, 11H, 12H
47156	03 06 16	R W W	Schedule type	0: Schedule OFF, 1: Date, 2: Day (continuous) Error code: 01H, 02H, 03H, 09H, 11H, 12H
47157	03 06 16	R W W	Starting schedule year	ASCII 2 digits (A space code can be used in the first digit.) 00 ~ 99 Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
47158	03 06 16	R W W	Starting schedule month	ASCII 2 digits (A space code can be used in the first digit.) 01 ~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47159	03 06 16	R W W	Starting schedule date	ASCII 2 digits (A space code can be used in the first digit.) 01 ~ 31 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47160	03 06 16	R W W	Starting schedule day	Bit correspondence Bit 0: Sunday, Bit 1: Monday...Bit 6: Saturday ON (1), OFF (0) Error code: 01H, 02H, 03H, 09H, 11H, 12H
47161	03 06 16	R W W	Starting schedule hour	ASCII 2 digits (A space code can be used in the first digit.) 00 ~ 23 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47162	03 06 16	R W W	Starting schedule minute	ASCII 2 digits (A space code can be used in the first digit.) 00 ~ 59 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47163	03 06 16	R W W	Ending schedule year	ASCII 2 digits (A space code can be used in the first digit.) 00 ~ 99 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47164	03 06 16	R W W	Ending schedule month	ASCII 2 digits (A space code can be used in the first digit.) 01 ~ 12 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47165	03 06 16	R W W	Ending schedule date	ASCII 2 digits (A space code can be used in the first digit.) 01 ~ 31 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47166	03 06 16	R W W	Ending schedule day	Bit correspondence Bit 0: Sunday, Bit 1: Monday...Bit 6: Saturday ON (1), OFF (0) Error code: 01H, 02H, 03H, 09H, 11H, 12H
47167	03 06 16	R W W	Ending schedule hour	ASCII 2 digits (A space code can be used in the first digit.) 00 ~ 23 Error code: 01H, 02H, 03H, 09H, 11H, 12H

6) File-related-parameter

Reference number	Applied function code	R/W	Content	Detail
47207	03 06 16	R W W	File 1 Data recording cycle	0: 0.1 sec., 1: 0.2 sec., 2: 0.5 sec., 3: 1 sec., 4: 2 sec., 5: 3 sec., 6: 5 sec., 7: 10 sec., 8: 15 sec., 9: 20 sec., 0: 30 sec., 11: 1 min., 12: 2 min., 13: 3 min., 14: 5 min., 15: 10 min., 16: 15 min., 17: 20 min., 18: 30 min., 19: 60 min. Error code: 01H, 02H, 03H, 09H, 11H, 12H
47208	03 06 16	R W W	File 1 Start trigger	0: Key, 1: Alarm, 2: Contact input Error code: 01H, 02H, 03H, 09H, 11H, 12H
47209	03 06 16	R W W	File 1 Start condition 1	ASCII 2 digits 47208: The start trigger of File 1 is; 1: In case of alarm, 01 ~ Alarm output 2: In case of contact input, 01 ~ Number of remote contact Error code: 01H, 02H, 03H, 09H, 11H, 12H
47210	03 06 16	R W W	File 1 Start condition 2	Number of pre-trigger: 10-increment for 0 ~ 950 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47211	03 06 16	R W W	File 1 End trigger	0: Same as Start trigger, 1: Count Error code: 01H, 02H, 03H, 09H, 11H, 12H
47213	03 06 16	R W W	File 1 End condition	Count: 10-increment for 0 ~ 30000 Error code: 01H, 02H, 03H, 09H, 11H, 12H
47221	03 06 16	R W W	Storing type	0: Binary (setting information existed), 1: CSV Error code: 01H, 02H, 03H, 09H, 11H, 12H
47222	03 06 16	R W W	CF saving cycle	0: None, 1: 1 min., 2: 2 min., 3: 3 min., 4: 5 min., 5: 10 min., 6: 20 min., 7: 30 min., 8: 60 min. Error code: 01H, 02H, 03H, 09H, 11H, 12H
47223	03 06 16	R W W	Data type	0: Sample, 1: Average, 2: Maximum, 3: Minimum, 4: Maximum/minimum Error code: 01H, 02H, 03H, 09H, 11H, 12H
47231	03 06 16	R W W	Storing file directory 1, 2	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47232	03 06 16	R W W	Storing file directory 3, 4	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47233	03 06 16	R W W	Storing file directory 5, 6	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47234	03 06 16	R W W	Storing file directory 7, 8	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
47235	03 06 16	R W W	Storing file directory 9, 10	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47236	03 06 16	R W W	Storing file directory 11, 12	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47237	03 06 16	R W W	Storing file directory 13, 14	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47238	03 06 16	R W W	Storing file directory 15, 16	ASCII 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
47241	03 06 16	R W W	Record ON/OFF	0: Record OFF, 1: Record ON Error code: 01H, 02H, 03H, 09H, 11H, 12H
47301 ~ 47400	03 06 16	R W W	File 2 setting	Same as File 1 parameter (47201 ~ 47300)
47401 ~ 47500	03 06 16	R W W	File 3 setting	Same as File 1 parameter (47201 ~ 47300)
47501 ~ 47600	03 06 16	R W W	File 4 setting	Same as File 1 parameter (47201 ~ 47300)
47601 ~ 47700	03 06 16	R W W	File 5 setting	Same as File 1 parameter (47201 ~ 47300)

## 7) Marker text

Reference number	Applied function code	R/W	Content	Detail
48001	03 06 16	R W W	Marker text/ Designation of group number for writing	0 ~ 5, 00H: Group designation in displaying Error code: 01H, 02H, 03H, 09H, 11H, 12H
48002	03 06 16	R W W	Marker text/ Designation of writing text number	0 ~10, 00H: Designation of text performed last time Error code: 01H, 02H, 03H, 09H, 11H, 12H
48003	03 06 16	R W W	Marker text 1 1, 2	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48004	03 06 16	R W W	Marker text 1 3, 4	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48005	03 06 16	R W W	Marker text 1 5, 6	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48006	03 06 16	R W W	Marker text 1 7, 8	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48007	03 06 16	R W W	Marker text 1 9, 10	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48008	03 06 16	R W W	Marker text 1 11, 12	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48009	03 06 16	R W W	Marker text 1 13, 14	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48010	03 06 16	R W W	Marker text 1 15, 16	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48011	03 06 16	R W W	Marker text 1 17, 18	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48012	03 06 16	R W W	Marker text 1 19, 20	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48013	03 06 16	R W W	Marker text 1 21, 22	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48014	03 06 16	R W W	Marker text 1 23, 24	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48015	03 06 16	R W W	Marker text 1 25, 26	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H

Reference number	Applied function code	R/W	Content	Detail
48016	03 06 16	R W W	Marker text 1 27, 28	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48017	03 06 16	R W W	Marker text 1 29, 30	ASCII, Shift JIS 2 digits Error code: 01H, 02H, 03H, 09H, 11H, 12H
48018 ~ 48032	03 06 16	R W W	Marker text 2	Same as Marker text 1 (48003 ~ 48017)
48033 ~ 48047	03 06 16	R W W	Marker text 3	Same as Marker text 1 (48003 ~ 48017)
48048 ~ 48062	03 06 16	R W W	Marker text 4	Same as Marker text 1 (48003 ~ 48017)
48063 ~ 48077	03 06 16	R W W	Marker text 5	Same as Marker text 1 (48003 ~ 48017)
48078 ~ 48092	03 06 16	R W W	Marker text 6	Same as Marker text 1 (48003 ~ 48017)
48093 ~ 48107	03 06 16	R W W	Marker text 7	Same as Marker text 1 (48003 ~ 48017)
48108 ~ 48122	03 06 16	R W W	Marker text 8	Same as Marker text 1 (48003 ~ 48017)
48123 ~ 48137	03 06 16	R W W	Marker text 9	Same as Marker text 1 (48003 ~ 48017)
48138 ~ 48152	03 06 16	R W W	Marker text 10	Same as Marker text 1 (48003 ~ 48017)
48153 ~ 48167	03 06 16	R W W	Marker text 11	Same as Marker text 1 (48003 ~ 48017)
48168 ~ 48182	03 06 16	R W W	Marker text 12	Same as Marker text 1 (48003 ~ 48017)
48183 ~ 48197	03 06 16	R W W	Marker text 13	Same as Marker text 1 (48003 ~ 48017)
48198 ~ 48212	03 06 16	R W W	Marker text 14	Same as Marker text 1 (48003 ~ 48017)

Reference number	Applied function code	R/W	Content	Detail
48213 ~ 48227	03 06 16	R W W	Marker text 15	Same as Marker text 1 (48003 ~ 48017)
48228 ~ 48242	03 06 16	R W W	Marker text 16	Same as Marker text 1 (48003 ~ 48017)
48243 ~ 48257	03 06 16	R W W	Marker text 17	Same as Marker text 1 (48003 ~ 48017)
48258 ~ 48272	03 06 16	R W W	Marker text 18	Same as Marker text 1 (48003 ~ 48017)
48273 ~ 48287	03 06 16	R W W	Marker text 19	Same as Marker text 1 (48003 ~ 48017)
48288 ~ 48302	03 06 16	R W W	Marker text 20	Same as Marker text 1 (48003 ~ 48017)
48303 ~ 48317	03 06 16	R W W	Marker text 21	Same as Marker text 1 (48003 ~ 48017)
48318 ~ 48332	03 06 16	R W W	Marker text 22	Same as Marker text 1 (48003 ~ 48017)
48333 ~ 48347	03 06 16	R W W	Marker text 23	Same as Marker text 1 (48003 ~ 48017)
48348 ~ 48362	03 06 16	R W W	Marker text 24	Same as Marker text 1 (48003 ~ 48017)
48363 ~ 48377	03 06 16	R W W	Marker text 25	Same as Marker text 1 (48003 ~ 48017)
48378 ~ 48392	03 06 16	R W W	Marker text 26	Same as Marker text 1 (48003 ~ 48017)
48393 ~ 48407	03 06 16	R W W	Marker text 27	Same as Marker text 1 (48003 ~ 48017)
48408 ~ 48422	03 06 16	R W W	Marker text 28	Same as Marker text 1 (48003 ~ 48017)
48423 ~ 48437	03 06 16	R W W	Marker text 29	Same as Marker text 1 (48003 ~ 48017)

Reference number	Applied function code	R/W	Content	Detail
48438 ~ 48452	03 06 16	R W W	Marker text 30	Same as Marker text 1 (48003 ~ 48017)
48453 ~ 48467	03 06 16	R W W	Marker text 31	Same as Marker text 1 (48003 ~ 48017)
48468 ~ 48482	03 06 16	R W W	Marker text 32	Same as Marker text 1 (48003 ~ 48017)
48483 ~ 48497	03 06 16	R W W	Marker text 33	Same as Marker text 1 (48003 ~ 48017)
48498 ~ 48512	03 06 16	R W W	Marker text 34	Same as Marker text 1 (48003 ~ 48017)
48513 ~ 48527	03 06 16	R W W	Marker text 35	Same as Marker text 1 (48003 ~ 48017)
48528 ~ 48542	03 06 16	R W W	Marker text 36	Same as Marker text 1 (48003 ~ 48017)
48543 ~ 48557	03 06 16	R W W	Marker text 37	Same as Marker text 1 (48003 ~ 48017)
48558 ~ 48572	03 06 16	R W W	Marker text 38	Same as Marker text 1 (48003 ~ 48017)
48573 ~ 48587	03 06 16	R W W	Marker text 39	Same as Marker text 1 (48003 ~ 48017)
48588 ~ 48602	03 06 16	R W W	Marker text 40	Same as Marker text 1 (48003 ~ 48017)
48603 ~ 48617	03 06 16	R W W	Marker text 41	Same as Marker text 1 (48003 ~ 48017)
48618 ~ 48632	03 06 16	R W W	Marker text 42	Same as Marker text 1 (48003 ~ 48017)
48633 ~ 48647	03 06 16	R W W	Marker text 43	Same as Marker text 1 (48003 ~ 48017)
48648 ~ 48662	03 06 16	R W W	Marker text 44	Same as Marker text 1 (48003 ~ 48017)

Reference number	Applied function code	R/W	Content	Detail
48663 ~ 48677	03 06 16	R W W	Marker text 45	Same as Marker text 1 (48003 ~ 48017)
48678 ~ 48692	03 06 16	R W W	Marker text 46	Same as Marker text 1 (48003 ~ 48017)
48693 ~ 48707	03 06 16	R W W	Marker text 47	Same as Marker text 1 (48003 ~ 48017)
48708 ~ 48722	03 06 16	R W W	Marker text 48	Same as Marker text 1 (48003 ~ 48017)
48723 ~ 48737	03 06 16	R W W	Marker text 49	Same as Marker text 1 (48003 ~ 48017)
48738 ~ 48752	03 06 16	R W W	Marker text 50	Same as Marker text 1 (48003 ~ 48017)

## 5.8 Range number table

Input type	Range number	Measurement range			Decimal place
DC voltage	01	-13.80	—	13.80 mV	2
	02	-27.60	—	27.60 mV	2
	03	-69.00	—	69.00 mV	2
	04	-200.0	—	200.0 mV	1
	05	-500.0	—	500.0 mV	1
	06	-2.000	—	2.000 V	3
	07	-5.000	—	5.000 V	3
	08	-10.00	—	10.00 V	2
	09	-20.00	—	20.00 V	2
	10	-50.00	—	50.00 V	2
Thermocouple	21	—	—	300.0 °C	1
	22	—	—	600.0 °C	1
	23	-200	—	1370 °C	0
	24	-200.0	—	200.0 °C	1
	25	-200.0	—	350.0 °C	1
	26	-200	—	900 °C	0
	27	-200.0	—	250.0 °C	1
	28	-200.0	—	500.0 °C	1
	29	-200	—	1200 °C	0
	30	-200.0	—	250.0 °C	1
	31	-200.0	—	400.0 °C	1
	32	0	—	1200 °C	0
	33	0	—	1760 °C	0
	34	0	—	1300 °C	0
	35	0	—	1760 °C	0
	36	0	—	1820 °C	0
	37	-200.0	—	400.0 °C	1
	38	-200.0	—	750.0 °C	1
	39	-200	—	1300 °C	0
	40	0	—	2315 °C	0
	41	0	—	2315 °C	0
	43	0	—	1888 °C	0
	44	-50.0	—	290.0 °C	1
	45	-50.0	—	600.0 °C	1
	46	-50	—	1310 °C	0
	47	0.0	—	280.0 K	1
	48	0.0	—	350.0 °C	1
	49	0.0	—	650.0 °C	1
	50	0	—	1395 °C	0
U	51	-200.0	—	250.0 °C	1
	52	-200.0	—	500.0 °C	1
	53	-200.0	—	600.0 °C	1
	54	-200.0	—	250.0 °C	1
	55	-200.0	—	500.0 °C	1
	56	-200	—	900 °C	0
RTD	70	-140.0	—	150.0 °C	1
	71	-200.0	—	300.0 °C	1
	72	-200.0	—	850.0 °C	1
	76	-140.0	—	150.0 °C	1
	77	-200.0	—	300.0 °C	1
	78	-200.0	—	649.0 °C	1
	79	-200.0	—	649.0 °C	1
	80	4.0	—	374.0 K	1
	DI	90	0 (OFF) / 1 (ON)		
	Pulse (+)	91	0	—	30000
	Pulse (-)	92	0	—	30000

# CHINO

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(판매점)