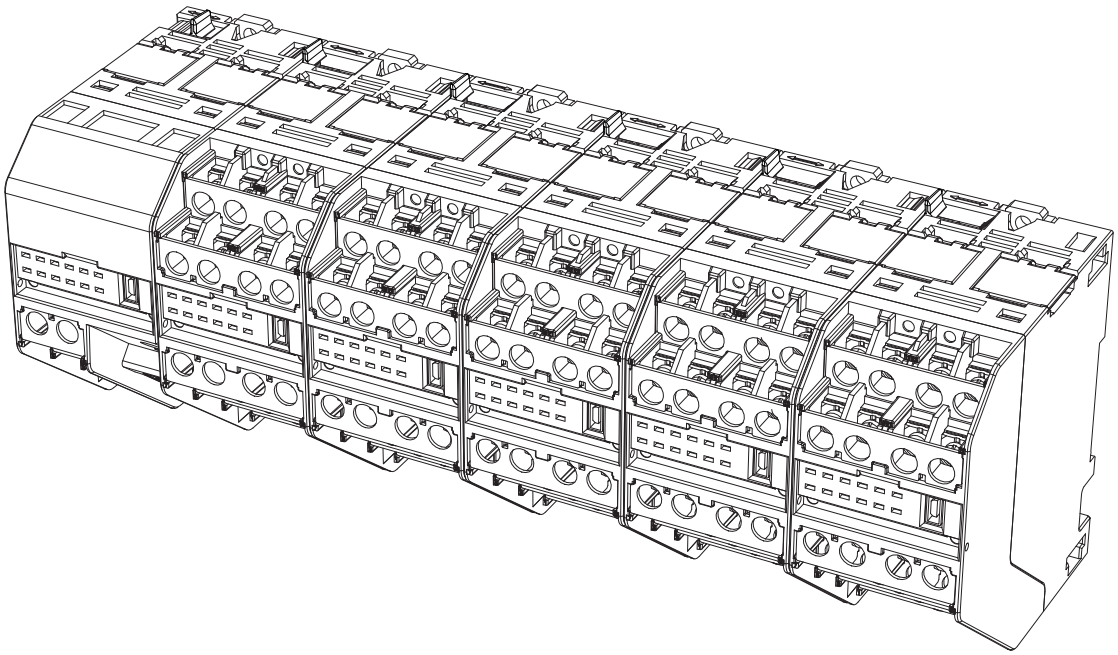
# Smart Power Monitor
# Smart Measurement and Monitoring Instrument

## Model KM1/KE1

# Communication Manual



Catalog number N172-E1-01

# Introduction

Model KM1/KE1 is capable of serial communication.

This user's manual describes the communication functions for Model KM1/KE1.

When using the communication functions, please read this manual carefully for proper use.
Also, please keep this manual at hand for quick reference at anytime necessary.

# Items on which you Agree by Using this Product

1. Warranty details
   1) Warranty period
      The warranty period for this product is one year from purchase or delivery to a specified site.
   2) Warranty scope
      If faults attributable to Omron arise with this product within the above warranty period, a replacement product will be provided or repair services will be provided for free at the site where the user purchased the product. However, if any of the following are the cause of the fault, the product will be out-of-scope for the warranty.

      a) If the product is used in a condition, environment, or handling other than that stated in the catalog or Instruction Manual.
      b) If the fault was due to other products
      c) If the fault was due to modifications or repairs other than those by Omron
      d) If the product was used in different ways from those for which the product was originally intended
      e) If the fault could not be expected based on the level of science and technology as of the time delivery from Omron.
      f) If the fault is due to reasons not attributable to Omron, such as natural disasters

      Also, the warranty stated in this manual refers to the warranty for a single unit of this product, and damage caused by faults with this product is out-of-scope for the warranty.

2. Liability limitation
   1) Omron shall not bear any responsibility for special damage, indirect damage, or consequential damage arising due to this product.
   2) Omron shall not bear any responsibility for results arising from programs run by parties other than Omron for this product, which can be programmed.

3. Conditions for compatibility purposes
   1) If this product is used with other products, you need to check standards and regulations or restrictions that need to be complied with. Also, you need to check the compatibility of systems, machines and devices to be used with this product. If you do not perform the above, Omron shall not bear any responsibility for the compatibility of this product.
   2) In case of using this product for any purpose other than the below, please contact Omron Sales representative and confirm the specification. Also, use this product within the rated values and performance and take safety measures, such as the use of a safety circuit, to minimize the risk in case of a failure.
      a) Outdoor use and use which may have a potential chemical contamination or electric impedance, or use in conditions or environments other than those stated in the catalog or Instruction Manual
      b) Use for equipment such as nuclear control, incineration facilities, train/ aviation system, vehicle facilities, medical machines, entertainment machines, safety devices, or for facilities covered by regulations of administrative bodies or individual industries.
      c) Systems, machines, and devices which may cause harm to human lives and assets

d) Facilities which require a high reliability such as gas, water, and electricity supply systems, and 24-hour continuous operation system

e) Other purposes requiring a high level of safety as per the above a) – d)

3) If the product is used for purposes which may cause harm to human lives or assets, you must notify concerned parties of such risks related to overall systems, and you must check beforehand that a redundant design is created to ensure required safety, and that wiring and installation have been appropriately completed for the overall intended purposes for this product

4) Application examples stated in catalogues are for reference purposes. When you use product, you must check the performance and safety of related machines and devices.

5) You must fully understand prohibited items and precautions for use, so that there will be no unexpected damage to you or to third parties due to incorrect use of this product.

4. Modification to the specifications

The specifications of this product and accessories may be changed if necessary for reasons such as improvements. Please contact Omron sales representative to check the current specifications of this product.

5. Applicable scope

The details given above are based on the assumption that the product will be traded and used within Japan

If trading and using disparate outside Japan, please contact an Omron sales representative.

Contents of this manual

(1) This manual, in whole or part, shall not be reprinted or copied without permission.

(2) Specifications are subject to change without notice for improvement.

(3) We take all necessary measures to ensure the contents of this manual, but if you have a question or found a mistake, please contact Omron branch specified at the end of this manual or Omron sales office. In doing so, please also state the catalog number given at the end of the manual.

# Safety Precautions

## ● Symbols for Safe Use and Their Meanings

For your safety use of Model KM1/KE1, this manual uses indications and symbols below to describe the points to note.

The points to note shown here indicate important details related to safety. You must adhere to them.

The indications and symbols are as follows:

### Meaning of warning

| | |
|---|---|
| ⚠ **Caution** | **Handling this product incorrectly is dangerous. This may lead to mild to moderate severity ended injuries, or this may lead to damage to objects** |

## ● Explanation of Symbols

| Symbol | Meaning |
|---|---|
|  | ● Do not dismantle<br>Dismantling of the equipment may cause injuries such as electric shock |
|  | ● Mandatory indication<br>Giving instructions to the action of a general user |
|  | ● Caution, risk of electric shock<br>Giving warning against the possibility of electric shock under certain conditions |
|  | ● Caution, risk of explosion<br>Improper use may cause explosion |

● Warning

| ⚠ Caution | |
|---|---|
| Ignition may occur and this may cause damage to objects.<br>Make sure you tighten terminal screws with standard tightening torque.<br>Recommended tightening torque for terminal screws : 0.69 - 0.88 N·m<br>Make sure the screws are fixed properly after tightening. | |
| Explosion may lead to mild to moderate severity ended injuries, or this may lead to damage to objects. Do not use this where inflammable and explosive gases exit. | |
| Breakage or explosion may occur.<br>Use the power-supply voltage and load within the specifications and rated voltage. | |
| Breakage or explosion may occur.<br>No isolation exits between the voltage input circuit and CT secondary circuit. If the dedicated CT is earthed, a short circuit occurs between the voltage input circuit and CT secondary circuit because of improper wiring, so do not earth the dedicated CT and ZCT to prevent a failure.<br>This product uses the dedicated CT and ZCT and therefore proper measurement is possible even when the CT is not earthed. | |
| Electric shocks may occur.<br>You must turn off the power before connecting to the CT. | |
| Electric shocks may occur.<br>Do not touch the terminal during power distribution. | |
| Electric shocks may occur.<br>For the primary electric wire clamping the CT, make sure that you use an electric wire coated with a basic-insulation layer.<br>When clamping a conductive object such as a bus bar, make sure that you ensure an electric wire coated with a basic-insulation layer before use. | |
| Electric shocks, minor injuries, ignition, or an instrument fault may occur.<br>Do not dismantle, repair and alter. | |

# Safety Points

To prevent an operational failure and incorrect operation or adverse effects on the performance and functions of this product, please adhere to the following:

1) Do not use or store (including transportation) this product under the environments below:
   - In a place with large vibrations or which is greatly influenced by shocks
   - In an unstable place
   - In a place at a temperature or humidity outside the specification range
   - Places with large changes in temperature and humidity, or where there is a possibility of condensation or freezing
   - In a place subjected to direct sunlight
   - Outdoors or in a place exposed to wind and rain
   - In a place affected by static electricity or noise
   - In a place subjected to water, oil and salt water
   - In a place where corrosive gases (in particular, sulfurizing gas and ammonia gas) are generated
   - In a place with a lot of dust or iron powder
   - In a place that is affected by electrical fields or magnetic fields
2) Fix the DIN rail tightly with screws. Also, make sure that the DIN rail is properly mounted on the main unit. Otherwise, the DIN rail, main unit of the product and wiring may come off due to vibration or shock.
3) For the DIN rail, use a rail of 35 mm width (Omron Model PFP-50N/-100N).
4) For the main unit of the product, use a crimp-model terminal suitable for a M3.5 screw for wiring.
5) Make sure that the specifications and wiring are appropriate before power distribution.
6) Please read carefully and understand this manual before use and maintenance. Not doing so may result in electric shock, faults, accidents, injury, or incorrect operation.
7) Install a switch or circuit breaker that meets relevant requirements specified in IEC60947-1 and IEC60947-3 and provide proper indication, so that an operator is able to turn off the power right away.
8) Understand this manual and set the equipment.
9) Keep this product away from the equipment generating very high-frequency noise or surges.
10) Please touch this product after taking measures against static electricity, such as touching metal that has been earthed.
11) To prevent inductive noise, install a wire on the main unit separately from a power line with high voltage and high currents. Also, do not install a wire in parallel with, or do not share the same cable with, a power line. Effective methods are separate piping and ductwork and the use of a shielded line.
12) Do not install this product adjacent to any heat-generating device (a device with coil and winding, etc.).
13) Prevent any metal, conductive wire or swarf produced during installation and processing from entering this product.
14) Please do not use thinners when cleaning. Please use a commercially-available alcohol
15) Please use an appropriate electrical power source and wiring to provide power-supply voltage and input. Otherwise, a failure, loss of combustion or electric shock may occur.
16) Use screws to attach the wall surface tightly. Otherwise, the main unit of the product and wiring may come off due to vibration or shock.
17) In case of using more than one unit, slide the horizontally-connected hook until a clicking sound is heard.
18) When mounting the product on the DIN rail, slide the DIN hook until a clicking sound is heard.

For the dedicated CT, ZCT and dedicated CT cable, use ones specified by Omron.

| | | | | |
|---|---|---|---|---|
| Dedicated CT: | Segmentation Type | Model KM20-CTF-5A | Model KM20-CTF-50A | Model KM20-CTF-100A |
| | | Model KM20-CTF-200A | Model KM20-CTF-400A | Model KM20-CTF-600A |
| | Through Type | Model KM20-CTB-5A/50A | | |
| Dedicated CT for earthling wire | | Model K6ER-CN22 (with a cable) | | |
| Dedicated ZCT: | Segmentation Type | Model OTG-CN52 | Model OTG-CN77 | Model OTG-CN112 |
| | | Model OTG-CN36W | | |
| | Through Type | Model OTG-L21 | Model OTG-L30 | Model OTG-L42 |
| | | Model OTG-L68 | Model OTG-L82 | Model OTG-L156 |
| | | Model OTG-LA30W | | |

Dedicated CT cable: Model KM20-CTF-CB3 (3 m) (*Can be used for the dedicated ZCT)

20) This product cannot be used for a measurement purpose of the secondary inverter.
21) Do not block the air ventilation holes of this product and the area surrounding them, in order to allow heat to be emitted.
22) Check the terminal number and carry out wiring correctly. Do not connect anything to the terminal not in use.
23) This product is a "Class A" (for industrial environments) product. The use of this product in a housing environment may cause interference. In this case, appropriate measures should be taken to prevent interference.
24) Use the dedicated CT and ZCT in a low-voltage circuit at 600 V or below

# Precautions for Installation

● For optimizing the lifetime of this product

Use this product within the following range of temperature/humidity.

Temperature: -10 -+55°C (no freezing and condensing)

Humidity: 25 - 85%RH

The ambient temperature for this product instead of the board must not exceed 55°C.

The internal electronic components have a product lifetime. The lifetime of the components depends on the ambient temperature; the higher ambient temperature leads to a shorter lifetime, and the lower ambient temperature leading to a longer lifetime. Therefore, the lifetime can be extended by lowering the temperature inside the product. In case of attaching more than one Model KM1/KE1 firmly or installing one unit above the other, forced cooling operation should be considered such as using a fan to cool down the product.

● For reducing ambient noise

To prevent inductive noise, install a wire on terminal box of this product separately from a power line with high voltage and high currents. Also, do not install a wire in parallel with, or do not share the same cable with, a power line. Effective methods are separate piping and ductwork and the use of a shielded line.

Install a surge absorber or a noise filter on the peripheral devices generating noise (in particular, a motor, transformer, solenoid and magnet coil with inductance component).

Keep this product away from the equipment generating very high-frequency noise (a high-frequency welder, high-frequency sewing machine, etc.) or the equipment generating surges.

# Precautions for Use

1) Implement respective settings properly according to the monitoring targets.
2) Do not hold and drag the cable.
3) This product is not a specified measuring apparatus that is officially approved by the designated institution set forth in the Measurement Act. This product cannot be used for ス名 for electric energy.
4) In case of disposal of this product, handle it appropriately as industrial waste.
5) In case of using this product under the environment of overvoltage category III, set a varistor between the external line between the power source and the voltage measurement input of this product.
6) In case of connecting more than one unit, the power-supply voltage for this product should be from a different power source from the main circuit power supply.

# Before Using

Please read the manual provided with this product and confirm the following:

| When | Items to be confirmed | Matters to be confirmed |
|---|---|---|
| At the time of purchase | Exterior appearance | After purchase, make sure that there is no dent on the product and the package.<br>If any damage is found on the inner part of product, it may not be able to measure properly depending on the damaged part of it. |
| | Product model and specifications | Make sure that the specifications of the product you purchased meet your requirements. |
| At the time of installation | Installation location | Do not block the area where the product is installed for heat release.<br>Do not block the ventilating hole of the main unit.<br>When attaching the product firmly, consider forced cooling operation such as using a fan to cool down the product. |
| At the time of wiring | Terminal wiring | Do not apply excessive stress when tightening screws.<br>Also, make sure that the screws are firmly fixed after doing so using the specified torque (0.69 - 0.88 N•m). |
| | | Check the terminal polarity and carry out wiring correctly. |
| | Power supply and voltage input | Wire the power supply and voltage input properly. The internal circuit may be broken due to improper wiring. |
| Usage environment | Ambient temperature | The usage temperature for this product is -10 - +55°C (no freezing and condensing).<br>To extend the lifetime of this product, install it in a way to lower the ambient temperature. In a high-temperature environment, consider forced cooling operation by means of a fan. |
| | Vibration and shock | Make sure that the vibration and shock in the installation environment meets the defined requirements.<br>(The product is affected by vibration and shock near the conductor, so install it away from the conductor to the extent possible.) |
| | Entry of foreign substances | Install the product in a place where no liquid and foreign substance can enter.<br>Also, in case of corrosive gasses including sulfur and chlorine generated, take measures to improve the environment by removing the source of generation or installing a ventilation fan. |

# Relevant Manuals

| Man.No. | Model | Manual name | Details |
|---|---|---|---|
| KANC-701 | Model KM1-□□□□□-FLK | Model KM1 Smart Power Monitor User's Manual | Describes the overview, features, functions and settings of Model KM1 |
| SGTE-717 | Model KE1-□□□□□-FLK Model KE1-□□□□□-FLK | Model KE1 Smart Measurement and Monitoring Instrument User's Manual | Describes the overview, characteristics, functions and settings of Model KE1 |
| SGTE-718 | Model KE1-DRT-FLK | Model KE1 DeviceNet Communication Unit User's Manual | Describes the functions and settings of DeviceNet Communication Unit |
| GAMS-010 | Model KM1/KE1 | KM1/KE1-Setting User's Manual | Describes how to use setting tools and set the Model KM1/KE1 series |

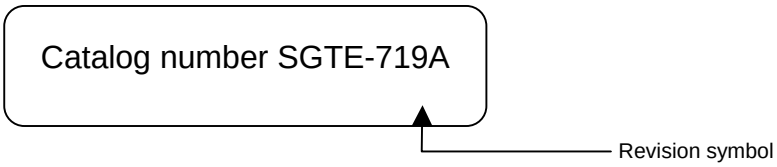
# Abbreviation

| Abbreviation | Model | Name | Unit type |
|---|---|---|---|
| PMU1A | Model KM1-PMU1A-FLK | Power Measurement Unit | Measurement master (*1) |
| PMU2A | Model KM1-PMU2A-FLK | Power Two-System Measurement Unit | |
| EMU8A | Model KM1-EMU8A-FLK | Pulse/Temperature Input Unit | Functional slave (*2) (*3) |
| PGR1C | Model KE1-PGR1C-FLK | Power/Earth Leakage Monitoring Unit | Measurement master (*1)(*3) |
| PVS1C | Model KE1-PVS1C-FLK | Power/Instantaneous Voltage Drop Monitoring Unit | |
| VSU1B | Model KE1-VSU1B-FLK | Instantaneous Voltage Drop Monitoring Unit | Functional slave (*2)(*3) |
| VAU1B | Model KE1-VAU1B-FLK | Voltage/Electric Current Monitoring Unit | |
| CTD8E | Model KE1-CTD8E | CT Expansion Unit | CT extension slave (*2) |
| ZCT8E | Model KE1-ZCT8E | ZCT Expansion Unit | |
| DRT | Model KE1-DRT-FLK | DeviceNet Communication Unit | Communication slave (*2) |

*1. Can be connected to the slave
*2. Can be connected to the measurement master
*3. Can operate independently

# Manual Revision History

The manual revision symbol is given at the end of the catalog number on the bottom left of the back cover of the manual.




| Revision symbol | Revision date | Revised page and description |
|---|---|---|
| A | April 2012 | First draft |
| B | June 2012 | Correction |

## About this manual

This manual is described according to communication method.
Refer to each chapter depending on the system used.
The functions of both Model KMI and Model KE1 are explained in this manual.

## Relevant manuals

This user's manual describes the communication functions for Model KM1/KE1.
For the functions of the main unit, refer to the Model KME1 User's Manual (Catalog no. KANC-701) for Smart Power Monitor, and the Model KE1 User's Manual for Smart Measurement and Monitoring Instrument (Catalog no. SGTE-717).

# Table of Contents

# Chapter 0 Overview

# 0. 1 Overview of communication method

## ■ Introduction

The use of communication functions allows you to monitor and collect measurement data for Model KM1/KE1 and change the settings after a program is created by the high-order equipment (e.g. PC). Therefore, this section is explained from the perspective of high-order equipment (e.g. PC).

CompoWay/F is a unified communication procedure within Omron's generic serial communication. It has a unified frame format and commands complying with FINS* that are used for Omron' s programmable controller, enabling easy communication between the high-order equipment (e.g. PC) and the component.
*FIN (Factory Interface Network service) is a protocol that enables messaging between controllers over Omron FA network.

Modbus is a communication control method that complies with RTU mode of Modicon's Modbus Protocol (PI-MBUS-300 Rev.J). Modbus is a registered brand of Schneider Electric. Modbus supports the same functions as the reading of CompoWay/F variable areas, writing of variable areas, operation commands and echo back test.

The following are the communication functions of Model KM1/KE1:

- Reading and writing of setting data
- Operation command
- Switching of operation mode

The communication functions are based on the following conditions:
Setting data can be written only in the setting mode.
Setting values changed in the setting mode become enabled by switching to the measurement mode.

## ■ Communication specifications

| Communication protocol | CompoWay/F | Modbus (RTU) |
|---|---|---|
| Transmission path connection | Multiple drop | |
| Communication method | Two-line method half-duplex | |
| Synchronization method | Asynchronous method | |
| Baud rate | **9.6**, 19.2, 38.4 kbps | |
| Transmission code | ASCII | Binary |
| Data bit length | **7,** 8 bits | 8 bits (fixed) |
| Stop bit length | 1, **2** bits | Automatically set through setting of vertical parity<br>Without vertical parity : 2 bits<br>With vertical parity : 1 bit |
| Incorrect detection | Vertical parity (none, **even number**, odd number)<br>BBC (Block Check Character) | Vertical parity (none, **even number**, odd number)<br>CRC-16 (Cyclical Redundancy Check) |
| Flow control | None | |
| Interface | RS-485 | |
| Re-try function | None | |
| Communicating response Transmission wait time | 0~99 (ms), initial value 20 (ms) | |

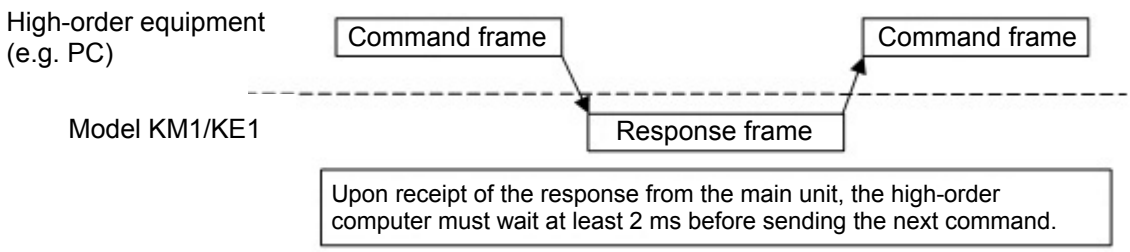
* The shaded areas above refer to initial values.

* The initial value of the communication protocol is CompoWay/F.

* Each of the communication speed, data bit length, stop bit length and vertical parity can be set independently.

## ■ Transmission procedure

The high-order equipment (e.g. PC) sends a command frame and Model KM1/KE1 sends a response frame for the description of the command; in short, one response frame is returned for one command frame. The operation of command frame and response frame are as follows:




## ■ Interface

The higher equipment (e.g. PC) implements communication that complies with the RS-485 interface.

Use Model K3SC to convert the RS-485/RS-232C interface.

## ■ Wiring

### ●RS-485

- The connection configuration is 1:1 or 1:N. For the 1:N connection, CompoWay/F can connect a maximum of 31 Model KM1/KE1 units, and Modbus can connect a maximum of 99 units.
  (Excluding high-order equipment (e.g. PC))
- The total cable length is up to a maximum of 500 m.
- Use a twist pair wire AWG24 with a cable (cross section area: 0.205 $mm^2$) to AWG14 (cross section area: 2.081 $mm^2$).
- A termination resistor must be connected to both ends of the transmission path, including for the high-order equipment (e.g. PC).
  Use 120 Ω (1/2 W) for the termination resistor.

The communicating specifications for high-order equipment (e.g. PC) and Model KM1/KE1 should be matched. Also, for the 1:N connection, all units should have the same communication specifications. However, allocate a unique communication unit no. to each unit. This section explains how to set communication specifications for Model KM1/KE1. For the high-order equipment (e.g. PC), refer to a separate manual.

## ■ Communication setting items

The communication specifications for Model KM1/KE1 are set by the setting level.
The following are the communication setting items and settings:

| Item | Settings | Initial value |
|---|---|---|
| Communication protocol | CompoWay/F / Modbus | CompoWay/F |
| Unit number | 00 ~ 99 | 01 |
| Communication speed | 9.6 / 19.2 / 38. 4 (kbit/s) | 9.6 (kbit/s) |
| Data bit length | 7 / 8 (bit) | 7 (bit) |
| Stop bit length | 1 / 2 (bit) | 2 (bit) |
| Vertical parity | None, even number, odd number | Even number |
| Transmission wait time | 00 ~ 99 (ms) | 20 (ms) |

## ●Communication setting items

Please note that setting values become enabled by switching to the measurement mode after setting.

- Selection of protocol

  You can select a communication protocol. Set from CompoWay/F or Modbus.

  You can select the communication protocol by setting the DIP switch.

  The protocol will be determined based on the status of the switch when the power is activated.

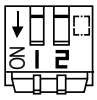
  To change the protocol, change the settings with the power switched off and turn on the power again.

  DIP switch

  No. 1 > not used

  No. 2 > switching of communication protocol : ON Modbus

  OFF CompoWay/F




  When Modbus is selected, 8 bits of data bit length will be fixed and the stop bit length will be automatically set through the setting of vertical parity.

  Without vertical parity : 2 bits

  With vertical parity : 1 bit

- Communication unit no.

  In case of communicating with the high-order equipment (e.g. PC), set a unit no. to identify each unit by high-order equipment (e.g. PC). The integral numbers from 0 to 99 can be set. The value of 1 is set at the time of purchase of this product. In case of communicating with multiple devices, avoid allocating duplicate unit no. to the devices to prevent improper operation.

- Communication speed

  Set the communication speed for the communication with the high-order equipment (e.g. PC). The communication speed is as follows:

  9.6 (9.6 kbps), 19.2 (19.2 kbps), 38.4 (38.4 kbps)

- Data bit length

  You can change the data bit length for communication. 7 bits and 8 bits are available for use.

- Stop bit length

  You can change the stop bits for communication. Either 1 or 2 can be set.

- Vertical parity

  You can set the communication parity. One of None, Even and Odd can be set.

- Transmission wait time

  You can set the transmission wait time of 0 to 99 ms in every 1 ms. The value of 20 ms is set at the time of purchase of this product.

## ■ Communication in case of using multiple units

Model KM1/KE1 can extend each functions by connecting multiple units.

The following are the precautions for the communication in case of connecting multiple units:

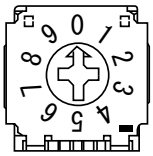
### ●Setting of Slave ID

The slave unit has a rotary switch on top of the product in addition to the DIP switch.

You can set a slave ID using the rotary switch.

Rotary switch

Set a slave ID *1-5 (do not use 0, 6 -9)




* Set slave IDs in a way to avoid duplicates across the connected units.

### ●Setup of unit no.

Set unit No. in a way to avoid duplicates across the connected units.

### ●Setting of communication protocol

The same communication protocol must be used within the same system.

* For more detailed settings, refer to the KM1/KE1 User's Manual.

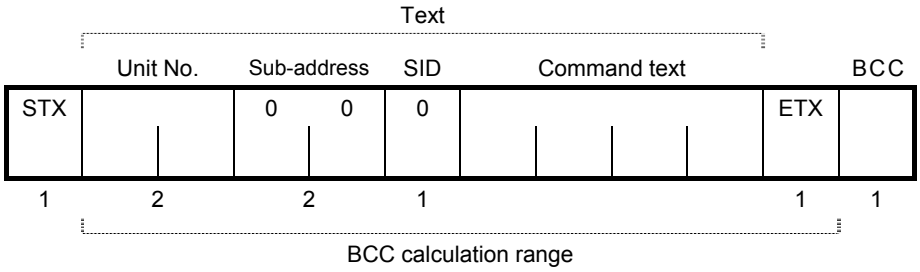
# Chapter 2 CompoWay/F Communication Procedure

Please read this chapter for the communication according to the CompoWay/F format.

# 0.1 Data format

H' before a value refers to a hex number (e.g. H'02).
Other values refer to ASCII characters.
The number below each frame separator refers to the number of bytes.

## ■ Command frame




| | |
|---|---|
| STX | This is a code (H'02) that represents the beginning of a communication frame. Make sure to set this code for a starting byte.<br>When STX is received again during the receiving process, start the receiving process again from where it was received. |
| Unit No. | • This is a type no. to identify the destination.<br>• Specifies "Communication Unit no." for Model KM1/KE1.<br>• Numbers of 00 - 99, xx (capital letters) can be set,<br>• Specify "xx" for broadcasting. However, a response will not be returned for broadcasting.<br>• No response will be returned for any unit no. other than the above. |
| Sub-address | Is not used for Model KM1/KE1. Make sure to specify "00." |
| SID (Service ID) | Is not used for Model KM1/KE1. Make sure to specify "00." |
| Command text | This is a part of command text. For details, refer to "2.2 Configuration of command text" (Page 2-5). |
| ETX | This is a code (H'03) indicating the end of a text. |
| BCC | This is a block check character.<br>The value of XOR in each byte (values from Unit No. - ETX) is called BCC. |

## ■ BCC calculation sample

BCC (Block Check Character) calculates XOR in each byte (values from node no. - ETX) and sets its 8 bits data in the BCC portion.

| STX | Unit No. | | Sub-address | | SID | Command text | | | | ETX | BCC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 02H | 0(30H) | 0(30H) | 0(30H) | 0(30H) | 0(30H) | 0(30H) | 5(35H) | 0(30H) | 3(33H) | 03H | 35H |

BCC = 30H ⊕ 30H ⊕ 30H ⊕ 30H ⊕ 30H ⊕ 30H ⊕ 35H ⊕ 30H ⊕ 33H ⊕ 03H =35H

The calculation result of 35H is set in the BCC portion.

⊕ refers to XOR calculation.

## ■ Response frame

| | Unit No. | Sub-address | Exit code | Command/text | | BCC |
|---|---|---|---|---|---|---|
| STX | | | | | ETX | |
| 1 | 2 | 2 | 2 | | 1 | 1 |

| Exit code | Name | Description | Error detection priority |
|---|---|---|---|
| 00 | Successfully completed | The command was completed successfully. | NA |
| 0F | FINS command error | The FINS command specified failed to be executed.<br>For details about the unsuccessful execution, refer to the FINS response code. | 8 |
| 10 | Parity error | The sum of bits that is the data received “1” does not match the setting value of “Communication parity.” | 2 |
| 11 | Framing error | The stop bit is “0.” | 1 |
| 12 | Overrun error | New data was about to be forwarded when no new data could be accepted. | 3 |
| 13 | BCC error | The BCC value received and the BCC value calculated do not match. | 5 |
| 14 | Format error | ▪ The character in the command text uses any number or alphabetical character other than 0-9 and A- F. However, the eco back test is excluded (For details, refer to the echo back test).<br>▪ There is no SID and command text. Or there is no command text.<br>▪ “MRC/SRC” for the command text is incomplete. | 7 |
| 16 | Sub-address error | ▪ The sub-address is not authorized (not supported).<br>▪ There is not sub-address, SID and command text.<br>▪ The sub-address consists of less than 2 characters, and there is no SID and command text. | 6 |
| 18 | Frame length error | The receiving frame exceeds the number of bytes specified (supported). | 4 |

- The exit code is returned to 1 command frame received by its node.
- No response is returned when the process is not completed up to ETX, BCC character.
- The error detection priority refers to a priority order in case of multiple errors occurred.

## Communication data

| Communication format | Setting (monitor) value | Negative value | Decimal point |
|---|---|---|---|
| CompoWay/F | Hex number 8 digits | 2's complement | Convert to hex number ignoring the decimal point<br>E.g. 105.0 → 1050 → H'0000041A |

## Exit code sample

The following are samples of exit codes in case of unsuccessful exit for the command:

Ex. 1: The sub-address consists of less than 2 characters and there is no SID, FINS-mini.

- **Command**

| | Unit No. | | | BCC |
|---|---|---|---|---|
| STX | | | ETX | |

The sub-address is short of one character.

- **Response**

| | Unit No. | Sub-address | Exit code | | BCC |
|---|---|---|---|---|---|
| STX | | 0 0 | 1 6 | ETX | |

The sub-address is "00" and the exit code is "16" (Format error)

Ex. 2: There is no command text

- **Command**

| | Unit No. | Sub-address | SID | | BCC |
|---|---|---|---|---|---|
| STX | | 0 0 | 0 | ETX | |

- **Response**

| | Unit No. | Sub-address | Exit code | | BCC |
|---|---|---|---|---|---|
| STX | | 0 0 | 1 4 | ETX | |

The exit code is "14" (Format error).

Ex. 3: The unit no. is incomplete.

- **Command**

| | | | BCC |
|---|---|---|---|
| STX | | ETX | |

The unit no. is short of one character.

- **Response**

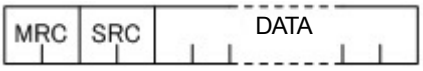
There is no response.

# 2.2 Configuration of command text

## ■ PDU (Protocol Data Unit) configuration

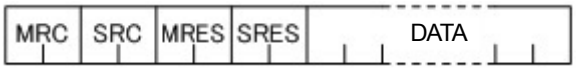
The MRC (Main Request Code) and SRC (Sub Request Code) as well as subsequent necessary data are sent to the command text.

- **Service request PDU**




After the MRC/SRC above are sent, the MRES (Main Response Code) and SRES (Sub Response Code) are sent to the response code, followed by necessary data.

- **Service response PDU (in a normal state)**




If the specified command text cannot be executed, only the MRC/SRC and MRES/SRES will be service response PDU.

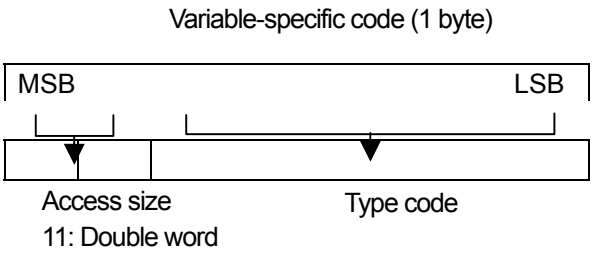
## ■ Variable area and parameter area

Model KM1/KE1 has two areas that enable data exchange via communication. In case of reading out measurement values, it is done for the variable area.
The variable area is largely divided into instantaneous value, maximum value, minimum value, alarm history and measurement history. Measurement values and measurement history can be read out by specifying the address for the measurement values.
The current settings are read (confirmation) and written (change of settings) for the parameter area.
The settings values can be confirmed and changed by specifying the address for the reading/ writing parameter.
For the list of variable areas and parameter areas, refer to “Chapter 3: List of communication addresses.”
For other commands, variable areas and parameter areas are not used.

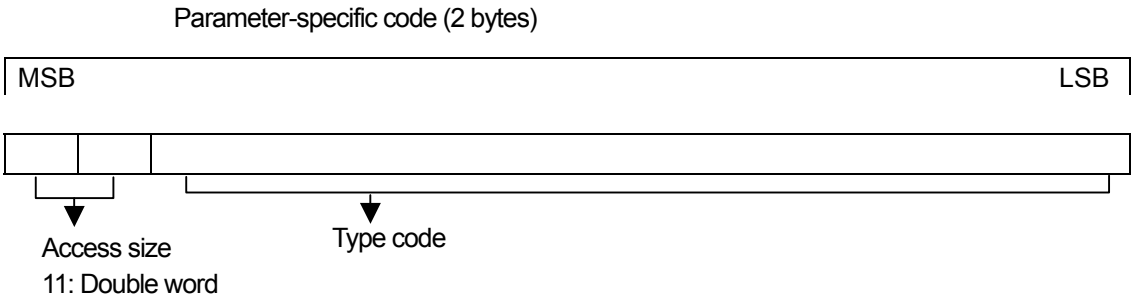
## Area definition

There are two areas: a variable-specific code for the variable area and a parameter-specific code for the parameter area.
Each code is defined as follows:

- **Variable area**




- **Parameter area**




For a variable-specific code, convert it to an ASCII code with 2 bytes, and for a parameter-specific code, convert it to an ASCII code with 4 bytes to be incorporated into the frame.

## Type code

The variable area type is defined as follows:

| Variable type | Description | Note |
|---|---|---|
| C0 | Each measurement value *1 | |

The parameter area type is defined as follows:

| Parameter type | Description | Note |
|---|---|---|
| C000 | Setting parameters, etc. | |

## Address

The address is represented by hex numbers with 2 bytes and allocated according to access size.
The address varies depending on the variable and parameter, so refer to “4.1 List of variable areas” and “4.3 List of parameter areas.”

## Element count

The element count is represented by hex numbers with 2 bytes.
The specified range of element count varies depending on the command, so refer to respective services.

## ■ List of services

| MRC | SRC | Service name | Processing |
|---|---|---|---|
| 01 | 01 | Reading of variable area | The variable area is read out. |
| 02 | 01 | Reading of parameter area | The parameter area is read out. |
| 02 | 02 | Writing of parameter area | The parameter area is written. |
| 05 | 03 | Reading of main unit attributes | The format and communication buffer size are read out. |
| 06 | 01 | Reading of controller status | The operational status is read out. |
| 07 | 01 | Reading of time information | Time information is read out |
| 07 | 02 | Writing of time information | Time information is written. |
| 08 | 01 | Echo back test | The echo back test is performed. |
| 30 | 05 | Operation command | The following are performed according to the command:<br>• "Reset" of total power consumption<br>• Reset of MAX and MIN values<br>• Reset of software<br>• Initialization of the settings of unit (restored to the factory default setting)<br>• Initialization of log<br>• All initialization<br>• Initialization of alarm history<br>• Reading of logging data of instantaneous voltage drop |

* In case of abnormal RAM and abnormal EEPROM, and during startup (before a measurement value is computed after the power is activated), any service is not accepted and no response is returned.

# 2.3 Details of services

## ■ Reading of variable area

The variable area is read out.

- **Service request PDU**

| MRC | SRC | Variable type | Address for reading start | Bit location | Element count |
|---|---|---|---|---|---|
| 0 1 | 0 1 | | | 0 0 | |
| 2 | 2 | 2 | 4 | 2 | 4 |

(The numbers in the lower part refer to the number of bytes)

- **Service response PDU**

| MRC | SRC | Response code | Reading data (for element count) |
|---|---|---|---|
| 0 1 | 0 1 | | |
| 2 | 2 | 4 | 8×n (n:1~25) |



(1) Variable type and reading start address
For each variable type and reading start address, refer to “Chapter 3: Communication data CompoWay/F.”

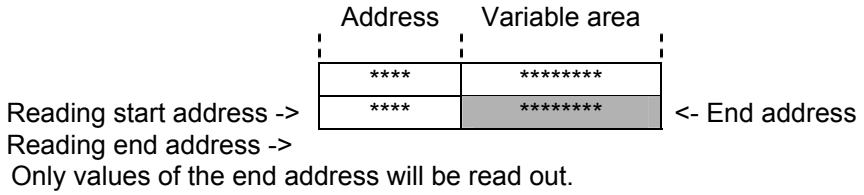
(2) Bit location
Model KM1/KE1 does not support bit access.
“00” is fixed.

(3) Element count
The number of variables to be read out is specified.

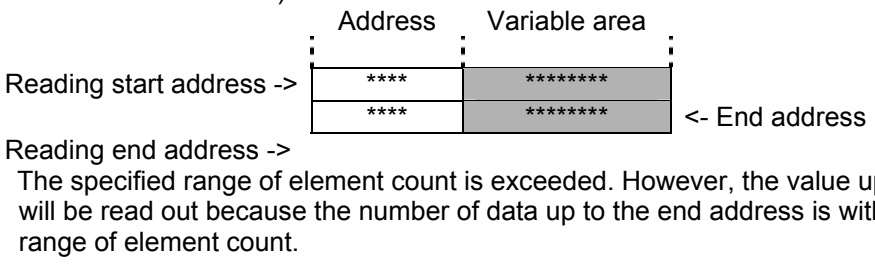
| Element count | Processing |
|---|---|
| 0000 | Successfully completed without reading (reading data not to be added to the service response PDU) |
| 0001 ~ 0019 | Successfully completed after reading up to 25 (H’19) |

* When the reading start address is within the variable area and the reading end address (reading address + element count) exceeds the end address in the variable area, the operation will be completed successfully after reading if the number of data up to the end address is within the specified range of element count.

Ex. 1: Specifying the end address for the reading start address, and specifying 2 as element count




Ex. 2: Specifying the end address -1 for the reading start address, and specifying H’ 03 (3 in decimal format) as element count




(4) Response code
- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 1002 | Short command length | The command length is too short. |
| 1101 | Area type error | The variable type is wrong. |
| 1103 | Error for out-of-range starting address | The reading start address is outside the range. |
| 110B | Exceeding response length | The element count exceeds the maximum value. |
| 1100 | Parameter error | The bit location is not 00. |
| 2203 | Operation error | The unit connection and setting (slave ID) is incorrect. |



### ● Communication example of reading of variable area

Voltage 1 (Instantaneous value) is 101.2 V and Voltage 2 (Instantaneous value) is 102.3 V, and those two measurement values are read out via one command text.

-

<Service request PDU>

| "0 1 | 0 1 | C 0 | 0 0 0 | 0 0 0 | 0 0 0 2" |
|---|---|---|---|---|---|
| MRC | SRC | Variable type | Address for reading start | Bit location | Element count (reading two measurement values) |

<Service response PDU >

| "0 1 | 0 1 | 0 0 0 0 | 0 0 0 0 0 3 F 4 | 0 0 0 0 0 3 F F" |
|---|---|---|---|---|
| MRC | SRC | Response code | Voltage 1 | Voltage 2 |

Model KM1/KE1 responds with the measurement values converted to hex numbers with no decimal point:
H' 000003F4=1012 (decimal numbers)
Voltage 1 (Instantaneous value) is 101.2 V according to the description of "One digit after the decimal point fixed" in "Chapter 3: Communication data CompoWay/F" (setting (monitor) value), and likewise Voltage 2 is 102.3 V according to H'000003FF=1023 (in decimal format).

## ■ Reading of parameter area

The parameter area is read out.

- **Service request PDU**

| MRC | SRC | Parameter type | Address for reading start | Element count |
|---|---|---|---|---|
| 0 2 | 0 1 | | | |
| 2 | 2 | 4 | 4 | 4 |

(The numbers in the lower part refer to the number of bytes)

- **Service response PDU**

| MRC | SRC | Response code | Parameter type | Address for reading start | Element count | Reading data (for element count) |
|---|---|---|---|---|---|---|
| 0 2 | 0 1 | | | | | |
| 2 | 2 | 4 | 4 | 4 | 4 | 8×n (n:0~25) |

(1) Parameter type and reading start address
For each parameter type and reading start address, refer to "Chapter 3: Communication data CompoWay/F."

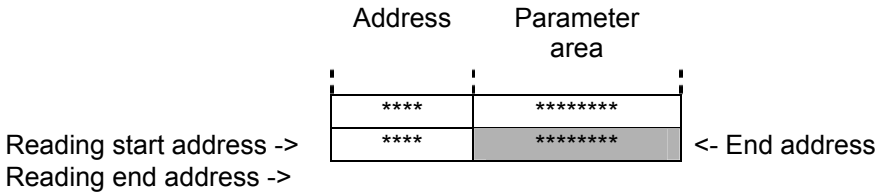
(2) Element count

The number of parameters to be read out is specified.

| Element count | Processing |
|---|---|
| 8000 | Successfully completed without reading (reading data not to be added to the service response PDU) |
| 8001 ~ 8019 | Successfully completed after reading up to 25 (H'19) |

* Setting range of element count: "8001" to "8019" -> the highest-order bit for element count must be always "1."
* When the reading start address is within the parameter area and the reading end address (reading start address + element count) exceeds the end address in the parameter area, the operation will be completed successfully after reading if the number of data up to the end address is within the specified range of element count.

Ex. 1: Specifying the end address for the reading start address, and specifying 2 as element count




Only value of the end address will be read out.

Ex. 2: Specifying the end address -1 for the reading start address, and specifying H' 03 (3 in decimal format) as element count


The specified range of element count is exceeded. However, the value up to the end address will be read out because the number of data up to the end address is within the specified range of element count.

(3) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 1002 | Short command length | The command length is too short. |
| 1101 | Area type error | Area type (variables, parameters, etc.) is wrong. |
| 1103 | Error for out-of-range starting address | The reading start address is outside the range. |
| 110B | Exceeding response length | The element count exceeds the maximum value. |
| 1100 | Parameter error | The bit location is not 00. |
| 2203 | Operation error | The unit connection and setting (slave ID) is incorrect. |

## ● Communication example of reading of parameter area

Measurement block 1CT ratio is 20 (when using 5A CT) and Measurement 2 CT ratio is 1000 (when using 5A CT), and those two data are read out via one command text.

<Service request PDU>

“0 2 0 1 C 0 0 0 0 4 8 8 8 0 0 2”

| MRC | SRC | Parameter type | Address for reading start | Element count (reading two measurement values) |
|---|---|---|---|---|

<Service response PDU >

“0 2 0 1 0 0 0 0 C 0 0 0 0 0 0 4 8 0 0 2

| MRC | SRC | Response code | Parameter type | Address for reading start | Element count |
|---|---|---|---|---|---|

0 0 0 0 0 0 1 4 0 0 0 0 0 3 E 8”

| Measurement block 1CT ratio | Measurement block 2 CT ratio |
|---|---|

Measurement Block 1CT ratio is H’ 00000014=20 (in decimal format) according to the description of H’00000001~H’000003E8 in “Chapter 3 Communication data CompoWay/F” (setting monitor value).

Likewise, Measurement Block 2CT ratio is H’ 000003E8=1000 (in decimal format).

## ■ Writing of parameter area

The parameter area is written.
Writing should be done after switching to the setting mode.

- **Service request PDU**

| MRC | SRC | Parameter type | Writing start address | Element count | Writing data (For element count) |
|---|---|---|---|---|---|
| 0 2 | 0 2 | | | | |
| 2 | 2 | 4 | 4 | 4 | 8×n (n:0~25) |

(The numbers in the lower part refer to the number of bytes)

- **Service response PDU**

| MRC | SRC | Response code |
|---|---|---|
| 0 2 | 0 2 | |
| 2 | 2 | 4 |

(1) Parameter type and writing start address
For each parameter type and writing start address, refer to “Chapter 3: Communication data CompoWay/F.”

(2) Element count
The number of parameters to be written is specified.

| Element count | Processing |
|---|---|
| 8000 | Successfully completed without writing (writing data not to be added to the service response PDU) |
| 8001 ~ 8019 | Successfully completed after writing up to 25 (H’19) |

* Setting range of element count: “8001” to “8019” -> the highest-order bit for element count must be always “1”.

(3) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1002 | Short command length | The command length is too short. |
| 1003 | Element count/number of data not matched | The element count and the number of data do not match. |
| 1101 | Area type error | Area type (variables, parameters, etc.) is wrong. |
| 1103 | Error for out-of-range starting address | The writing start address is outside the range. |
| 1100 | Parameter error | The writing data is outside the setting range. |
| 2203 | Operation error | Cannot be executed due to no setting level |

### ● Change of setting values

Make sure to set each parameter in setting mode.
The settings will not be updated in setting mode even after changing the setting values. The settings changed will be enabled after switching to measurement mode from setting mode.

● Communication example of writing of parameter area

Setting Measurement Block 1 CT type to 50A
(Switch to setting mode in advance)
<Service request PDU>

“0 2 0 2 C 0 0 0 0 4 8 4 8 0 0 1 0 0 0 0 0 0 0 1”

| MRC | SRC | Parameter type | Address for reading start | Element count | Writing data |
|---|---|---|---|---|---|

<Service response PDU >

“0 2 0 2 0 0 0 0”

| MRC | SRC | Response code |
|---|---|---|

According to “3.3 List of parameter areas,” Measurement Block 1 CT type is:
H’00000000:KM20-CTF-5A (5A), H’00000001:KM20-CTF-50A (50A),
H’00000002:KM20-CTF-100A (100A), H’00000003:KM20-CTF-200A (200A),
H’00000004:KM20-CTF-400A (400A), H’00000005:KM20-CTF-600A (600A) (setting (monitor) value).
Therefore, H’00000001 is 50A.

## ■ Reading of main unit attributes

The format and communication buffer size are read out.

- **Service request PDU**

| MRC | SRC |
|---|---|
| 0 5 | 0 3 |
| 2 | 2 |

- **Service response PDU**

| MRC | SRC | Response code | Format | Buffer size |
|---|---|---|---|---|
| 0 5 | 0 3 | | | 0 0 E 6 |
| 2 | 2 | 4 | 10 | 4 |

(1) Format

The format is represented by an ASCII code with 10 bytes. A space code is allocated in case of less than 10 bytes.

(Example) In case of Model KE1-PGR1C-FLK:

Format

| K | E | 1 | - | P | G | R | 1 | C | |
|---|---|---|---|---|---|---|---|---|---|

* -FLK will not be returned as a response.

(2) Buffer size

The buffer size is represented by hex numbers with 2 bytes and converted to an ASCII code with 4 bytes to be read out.

The buffer size is 230 bytes (=H' 00E6).

(3) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 2203 | Operation error | The unit connection and setting (slave ID) is incorrect. |

## ■ Reading of controller status

The operating status will be read out.
The controller status is read out for the master unit.

- Service request PDU

| MRC | SRC |
|---|---|
| 0 6 | 0 1 |
| 2 | 2 |

- Service response PDU

| MRC | SRC | Response code | Operation status | Related information |
|---|---|---|---|---|
| 0 6 | 0 1 | | | |
| 2 | 2 | 4 | 2 | 2 |

(1) Operation status

7 6 5 4 3 2 1 0

Bit location

| | 1 | 0 |
|---|---|---|
| System status | Suspended | Measuring |
| Master status | Suspended | Measuring |
| Not in use | - | - |
| Not in use | - | - |
| Not in use | - | - |
| Not in use | - | - |
| Not in use | - | - |
| Not in use | - | - |

(2) Related information

7 6 5 4 3 2 1 0

Bit location

| | 1 | 0 |
|---|---|---|
| Slave ID 1 | Suspended | Measuring |
| Slave ID 2 | Suspended | Measuring |
| Slave ID 3 | Suspended | Measuring |
| Slave ID 4 | Suspended | Measuring |
| Slave ID 5 | Suspended | In operation |
| Slave ID 6 | Suspended | In operation |
| Not in use | - | - |
| Not in use | - | - |

(3) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 2203 | Operation error | The unit connection and setting (slave ID) is incorrect. |

For the reading of controller status, a response will be returned along with the slave status only when a request is made for the master.
When this command is requested for the slave, a response will be returned with all the flags set to "0."

The status is defined as follows:

Measuring: The master connected and the slave configured to connect units is in measurement mode

Suspended: The master connected and the slave configured to connect units is in setting mode
For the slave not configured to connect units, only this particular slave is in suspended mode.

The system status and the status of all the slaves configured to connect units will be reflected to the flags by OR judgment.

E.g. If Master: Measuring, Slave 1: Suspended, then the system status is in "suspended mode."

## ■ Reading of time information

Time information will be read out.
Time information is read out for the master unit.
* The time information that can be read out from the slave is the time information of the master.

• Service request PDU

| MRC | SRC |
|---|---|
| 0 7 | 0 1 |
| 2 | 2 |

• Service response PDU

| MRC | SRC | Response code | Year | Month | Day | Hour | Minute | Second |
|---|---|---|---|---|---|---|---|---|
| 0 7 | 0 1 | | | | | | | |
| 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |

(1) Time information
Each of the last 2 digits of the year, the month, day, hour (24 hours) and minute (current time) on the internal clock is read in 2 digits.
Also, all values from the year to minute are represented by hex numbers.

(2) Response code
• Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

• An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |

### ● Communication example of reading of time information

When reading time information on April 1, 2012, 23:59:12:
<Service request PDU>
"0 7 0 1"
MRC SRC

<Service response PDU >
"0 7 0 1 0 0 0 0 1 2 0 4 0 1 2 3 5 9 1 2"
MRC SRC Response code

## ■ Writing of time information

Time information will be written.
Time information is read out for the master unit.
Writing should be done after switching to setting mode.
Upon successful writing, time will be measured from the writing time.

- Service request PDU

| MRC | SRC | Year | Month | Day | Hour | Minute | Second |
|---|---|---|---|---|---|---|---|
| 0 7 | 0 2 | | | | | | |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

- Service response PDU

| MRC | SRC | Response code |
|---|---|---|
| 0 7 | 0 2 | |
| 2 | 2 | 4 |

(1) Time information
Each of the last 2 digits of the year, the month, day, hour (24 hours) and minute (current time) on the internal clock is set in 2 digits.
Also, all values from the year to minute are represented by hex numbers.

(2) Response code
- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 1002 | Short command length | The command length is too short. |
| 1100 | Parameter error | The time information is incorrect. |
| 2203 | Operation error | Cannot be executed due to no setting level |

### ● Communication example of writing of time information

When setting time information on April 1, 2012, 23:59:12:
<Service request PDU>
"0 7 0 2 1 2 0 4 0 1 2 3 5 9 1 2"
MRC SRC Time information

<Service response PDU >
"0 7 0 2 0 0 0 0"
MRC SRC Response code

## ■ Echo back test

An echo back test will be performed.

- Service request PDU

| MRC | SRC | Test data |
|---|---|---|
| 0 8 | 0 1 | |
| 2 | 2 | 0- 200 |

- Service response PDU

| MRC | SRC | Response code | Test data |
|---|---|---|---|
| 0 8 | 0 1 | | |
| 2 | 2 | 4 | 0- 200 |

(1) Test data

Any test data is set within the range of 0 to 200.

The test data should be within the range of "communication data length" below.

| Communication data length | Test data |
|---|---|
| 8 bits | ASCII code H' 20 - H' 7E, H' A1-H' FE |
| 7 bits | ASCII code H' 20 - H' 7E |

(2) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |

### ● Communication example of echo back

When sending "1234" to the test data

<Service request PDU>

"0 8 0 1 1 2 3 4"

MRC SRC Test data

<Service response PDU >

"0 8 0 1 0 0 0 0 1 2 3 4"

MRC SRC Response code Test data

## ■ Operation command

This will be used for remote control of Model KM1/KE1.

- Service request PDU

| MRC | SRC | Command code | Related information |
|---|---|---|---|
| 3 0 | 0 5 | | |
| 2 | 2 | 2 | 2 |

- Service response PDU

| MRC | SRC | Response code |
|---|---|---|
| 3 0 | 0 5 | |
| 2 | 2 | 4 |

(1) Command code and related information

| Command code | Command description | Related information |
|---|---|---|
| 03 | Setting of total power consumption to zero | 00 |
| 04 | Switching to measurement mode | 00 |
| 07 | Switching to setting mode | 00 |
| 09 | Initialization of measurement history | 00 |
| | Initialization of setting values | 01 |
| | All initialization | 03 |
| | Initialization of alarm history | 04 |
| 10 | Reading of logging data of instantaneous voltage drop (Moving the reading pointer to the beginning of the stored data) | 00 |
| | Reading of logging data of instantaneous voltage drop (The log data at the reading pointer location is read out. The reading pointer moves one step forward.) | 01 |
| | Reading of logging data of instantaneous voltage drop (The log data at the reading pointer location is read out, and the reading data is deleted from the memory. The reading pointer moves one step forward.) | 02 |
| 12 | Reset of each maximum measurement value | 00 |
| 13 | Reset of each minimum measurement value | 00 |
| 99 | Reset of software | 00 |

* The command code of "09" can be initialized only in setting mode.

(2) Response code

- Successfully completed

| Response code | Name | Description |
|---|---|---|
| 0000 | Successfully completed | No abnormality found |

- An error occurred

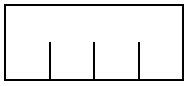
| Response code | Error name | Cause |
|---|---|---|
| 1001 | Exceeding command length | The command length is too long. |
| 1002 | Short command length | The command length is too short. |
| 1100 | Parameter error | The command code and related information is incorrect. |
| 2203 | Operation error | Cannot be executed due to no setting level |

(3) Explanation on and precautions for each operation command

- Setting of total power consumption to zero
  Total power consumption will be reset to 0.
  Upon reset, the power consumption will be accumulated again.
- Switching to measurement mode
  Measurement mode becomes active.
  The settings changed in setting mode will be saved in EEPROM and the product will be reset when switching to measurement mode. After reset, the operation will be implemented with the settings changed.
- Switching to setting mode
  Setting mode becomes active.
  Implement respective settings after switching to setting mode.
- Initialization of measurement history
  All of measurement history (measurement logging data) will be initialized.
- Initialization of setting values
  All setting values will be restored to factory setting.
- All initialization
  Total power consumption will be set to zero, and measurement history, setting values and alarm history will be initialized.
- Initialization of alarm history
  Alarm history will be initialized.
- Reset of each maximum/minimum measurement value
  Each measurement maximum value and minimum value will be reset.
  Reset of maximum value: At the time of reset, the value will be reset to 0 that is a minimum value.
  Reset of minimum value: At the time of reset, the value will be reset to a maximum value that is within the measurement range.
- Reset of software
  The CPU will be reset and restored to the state at the time of power activation.
  No response will be returned only for this operation command (no service response PDU).

- Reading of logging data of instantaneous voltage drop
  The AD value of instantaneous voltage drop occurred first (converted to an effective value) can be read out.
  For the values to be read out, refer to P4 to 32.
  The following are the data formats:

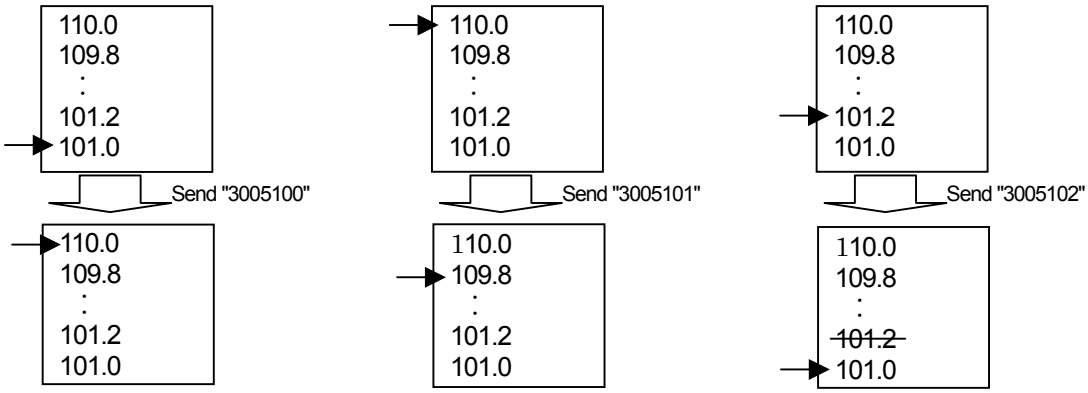
Data (AD value)



4

The difference in operation according to related information is:

1) In case of related information 00 2) In case of related information 01 3) In case of related information 02



# 2.4 List of response codes

Successfully completed

| Response Code | Name | Description | Error detection priority |
|---|---|---|---|
| 0000 | Successfully completed | No abnormality found | NA |

An error occurred

| Response code | Name | Description | Error detection priority |
|---|---|---|---|
| 0401 | Command not supported | The service function of the relevant command is not supported. | 1 |
| 1001 | Exceeding command length | The command length is too long. | 2 |
| 1002 | Short command length | The command length is too short. | 3 |
| 1101 | Area type error | Area type (variables, parameters, etc.) is wrong. | 4 |
| 1103 | Error for out-of-range starting address | The reading/writing start address is outside the range. | 5 |
| 1104 | Error for out-of-range end address | The writing end address (writing address + element count) exceeds the end address of the writing area. | 6 |
| 1003 | Element count/number of data not matched | The element count and the number of data do not match. | 7 |
| 110B | Exceeding response length | The response length exceeds the communication buffer size. | 8 |
| 1100 | Parameter error | The bit location is not 00.<br>The writing data is outside the setting range.<br>The command code and related information is incorrect.<br>The time information is incorrect. | 9 |
| 3003 | Read only | The variable area is read-only and cannot be written. | 10 |
| 2203 | Operation error | Cannot be processed by operation command. | 11 |

# Chapter 3 Modbus Communication Procedure

Please read this chapter for the communication according to the Modbus format.

# 3.1 Data format

Complying with the Modbus (RTU) communication procedure, the data aggregation called a frame will be a unit for a command from the high-order equipment (e.g. PC) and a response from Model KM1/KE1. The following is the configuration of the command frame and response frame.
As explained below, the "H'" before a value, like "H' 02," means that this is a hex number.
Also, a number or alphabetical character in double quotation marks, like "00" refers to an ASCII character.

## ■ Command frame

In RTU mode, the procedure starts with at least 3.5 character times silent interval, ending at least 3.5 character times silent interval.


| | |
|---|---|
| | At least 3.5 character times silent interval |
| Unit no. | Specify "Unit no. "<br>H'00 - H'63 (0 ~ 99) can be set in hexadecimal notation.<br>Specify H'00 for broadcasting.<br>However, a response will not be returned for broadcasting. |
| Function code | A function code is a code that indicates a command type from the high-order equipment (e.g. PC) and is represented in hexadecimal notation with 1-byte. |
| Data | This is a text body corresponding to a function code.<br>Values such as a variable address and setting data are specified. (Set in hexadecimal notation) |
| CRC-16 | Cyclical Redundancy Check<br>This is a check code that is calculated using the values from Unit no. to data end.<br>Represented in hexadecimal notation with 2 bytes |
| | At least 3.5 character times silent interval |

- Calculation example of CRC-16

In a calculation work (16 bits resistor (called CRC resistor), 1 byte is processed at a time for a message.

(1) Set the initial value of the CRC resistor to H' FFFF.

(2) After the XOR of the first 1-byte data for the CRC resistor and message is calculated, put the result back to the CRC resistor.

(3) Shift the CRC resistor to the right by 1 bit while filling the MSB with "0."

(4) When the bit shifted from the LSB is "0," then repeat procedure (3) (shift processing of the next bit).
When the bit shifted from the LSB is "1," then put the result back to the CRC resistor after the XOR is calculated by the CRC resistor and H'A001.

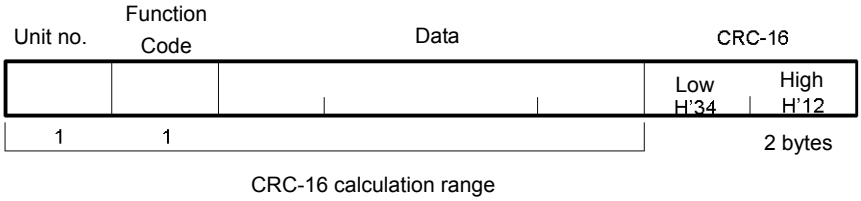
(5) Repeat procedures (3) and (4) until 8 bits are shifted.

(6) If the end of the message is not processed, make the XOR of the next 1 byte for the CRC resistor and message calculated, and then put the result back to the CRC resistor to repeat the procedure from (3).

(7) Add the calculation result (value of the CRC resistor) to the message, starting from the lower bytes.

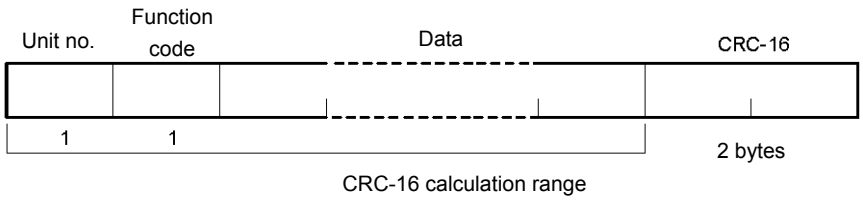
(Example of addition of the calculation result)

If the calculated value of the CRC is H'1234, it will be added to the command frame as follows:

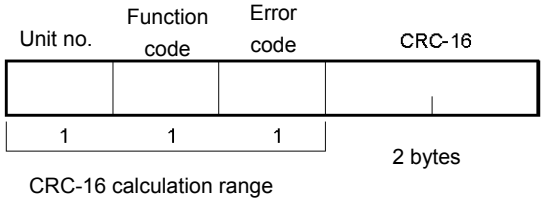



## ■ Response frame

- Response frame in a normal state




- Response frame in an abnormal state

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| | |
|---|---|
| Unit no. | The number specified by the command frame will be entered.<br>This is the unit no. that returned the response. |
| Function code | This is the function code received.<br>However, for a response frame in an abnormal state, the abnormal response will be represented by adding "H'80" to the function code received.<br>(Example)<br>Function code received =H'03<br>Function code within a response frame in an abnormal state = H'83<br>In case of receiving a function code not supported, function code = H'80 |
| Error code | This is an end code indicating the description of abnormality. |
| CRC-16 | Cyclical Redundancy Check<br>This is a check code that is calculated using the values from unit no. to data end.<br>Represented in hexadecimal notation with 2 bytes |

## ■ Error code

| End code | Name | Description | Error detection priority |
|---|---|---|---|
| H' 01 | Function code error | In case of receiving a function code not supported | 1 |
| H'02 | Variable address error | The variable area number specified by a variable address and the address within the variable area are outside the range. | 2 |
| H'03 | Variable data error | The element count and the number of data do not match.<br>Element count X 4 and the byte count do not match.<br>The response length exceeds the communication buffer size.<br>The command mode and related information is incorrect.<br>The writing data is outside the setting range. | 3 |
| H'04 | Operation error | The settings for the writing data are not permitted by the current operation mode.<br>The operation command cannot to be processed. | 4 |

- No response

If any of the conditions below is fulfilled, no response will be returned without processing the command received:

Therefore, a time-out will occur in the high-order equipment (e.g. PC).

- The unit no. for the command received and the communication unit no. do not match.
- A parity error, framing error or overrun error occurred due to a transmission error, etc.
- A CRC-16 code error occurred in the command frame received.
- The receiving time interval of each data consisting of a command frame is more than 3.5 character times.

In the case described below, the process will be executed but no response will be returned (in case of a targeted function).

- Broadcasting is specified (Unit no.: H'00).

# 3.2 List of functions

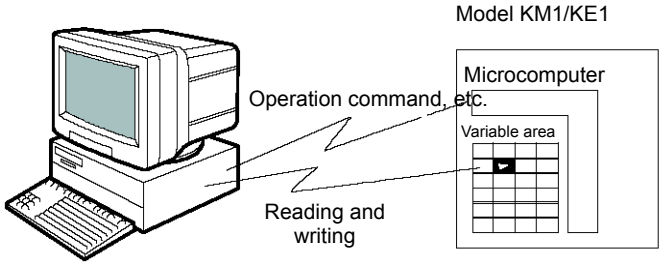
The following is a list of function codes.

- List of function codes

| Function code | Name | Processing |
|---|---|---|
| 03 (H'03) | Variable reading (More than one) | The variable area is read out.<br>Multiple consecutive variables can be read out. |
| 16 (H'10) | Variable writing (More than one) | The variable area is written.<br>Multiple consecutive variables can be written.<br>Broadcasting can be specified. |
| 06 (H'06) | Variable writing (Operation command) | The operation command is written.<br>Broadcasting can be specified. |
| 08 (H'08) | Echo back test | An echo back test is performed. |

# 3.3 Variable area

The area exchanging data with Model KM1/KE1 via communication is called a variable area.
Current values are read out and each setting data is read out/written for a variable area.
Meanwhile, an operation command does not use a variable area.




## ■ Address

An address is allocated to each variable type.
The address is represented by hex numbers with 2 byes and allocated according to access size.

## ■ Element count

The element count is represented by hex numbers with 2 bytes.
One element consist of 2-byte data so is specified by the two elements. By specifying element count in multiples of 2, the data can be read out and written in the 2 bytes.
E.g.: When the value for one item needs to be read out, set element count as <Element count (1) x 2 = 2>.

## ■ Setting value

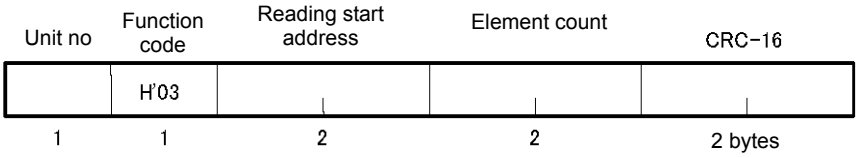
The reading and writing values for the variable area are represented by hex numbers ignoring the decimal point (a negative value is a 2's complement).
E.g.: 105.0 (in decimal format) > H'0000041A
The variable is an 8-digit number in hexadecimal notation. The negative value is a 2's complement.
The values are represented in hexadecimal notation ignoring the decimal point.

# 3.4 Details of services

## ■ Reading of variable area

For the variable area to be read out, set necessary data in the command frame below.

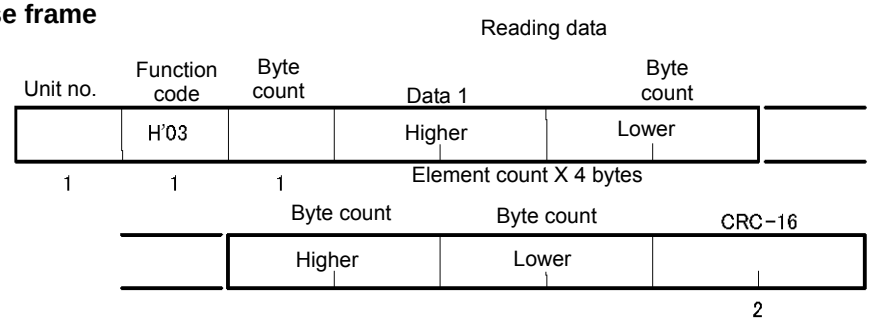
- **Command frame**




(The numbers in the lower part refer to the number of bytes)

| Data name | Description |
|---|---|
| Unit no. | Specify "Unit no." of Model KM1/KE1.<br>Hex numbers of H'01 - H'63 (1 ~ 99) can be set. |
| Function code | The function code for the variable area reading is H'03. |
| Reading start address | Specify the address for the setting data to be read out.<br>For addresses, refer to "3.1 List of variable areas." |
| Element count | Specify the number of data X 2 as element count to be read out.<br>Range: H' 0002~H'0032 (2 - 50)<br>In case of setting H' 0064, 50 data elements can be read out.<br>E.g.: When the number of data to be read out is two items, set H'0004.<br>You may specify H'0001 as element count, but only 2 bytes can be read. So, 4 byes (two of element count) should be applied. |
| CRC-16 | This is a check code that is calculated using the values from Unit no. to data end.<br>For the calculation method, refer to "3.1 Data format," "■ Command frame" and "●Calculation example of CRC-16." |

- **Response frame**




| Data name | Description |
|---|---|
| Unit no. | The values in the command frame are entered. |
| Function code | This is the function code received.<br>However, for a response frame in an abnormal state, an abnormal response will be represented by adding "H'80" to the function code received.<br>E.g.: Function code received =H'03<br>Function code within a response frame in an abnormal state = H'83 |
| Byte count | The number of byte for reading data is entered. |
| Element count | The values for setting data read out are entered. |
| CRC-16 | This is a check code that is calculated using the values from Unit no. to data end.<br>For the calculation method, refer to "3.1 Data format," "■ Command frame" and "● Calculation example of CRC-16." |

- **Response code**

| Function code | Error code | Error name | Cause |
|---|---|---|---|
| H'83 | H'02 | Variable address error | The address for the reading start variable is abnormal.<br>The variable area number is wrong.<br>The address within the variable area is outside the range. |
| | H'03 | Variable data error | The element count exceeds the specified range.<br>Specified range : H' 0002 - H'0032 (2~50) |
| | H'04 | Operation error | The command is not accepted under the communication area conditions. |
| H'03 | — | Successfully completed | No abnormality found |

## ● Example of command/response

Below is the example of reading of "Voltage 1 (Instantaneous value)."

(In case of Unit no.: H' 01)

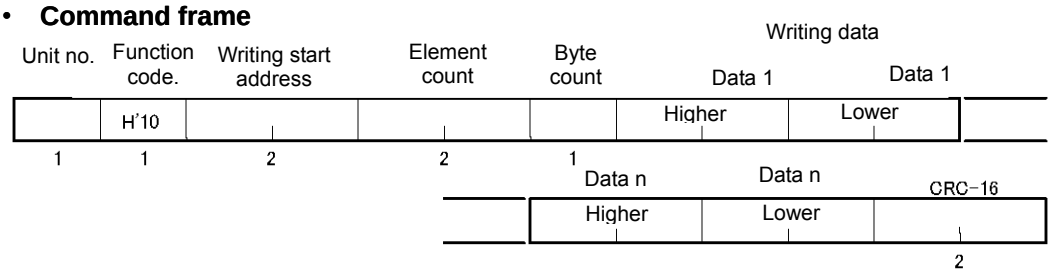
Command: 01 03 00 00 00 02 C4 0B(CRC-16)

Response: 01 03 04 00 00 09 60 FC 4B(CRC-16)

## ■ Writing of variable area

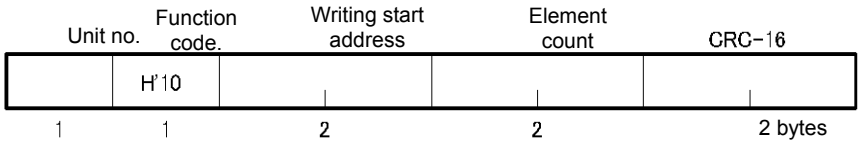
For the variable area to be written, set necessary data in the command frame below.
Writing should be done after switching to the setting mode.
* The writing is actually implemented when switching back to measurement mode.

- **Command frame**




| Data name | Description |
|---|---|
| Unit no. | Specify "Unit no." of Model KM1/KE1.<br>Hex numbers of H'01 - H'63 (01 ~ 99) can be set. |
| Function code | The function code for the variable area writing is H'10. |
| Writing start address | Specify the address for the setting data to be written.<br>For addresses, refer to Chapter 4. |
| Element count | Specify the number of setting data X 2 as element count to be written.<br>Specified range : H' 0002 - H'0032 (2~50) |
| Byte count | Specify the address for the data to be written. |
| CRC-16 | This is a check code that is calculated using the values from Unit no. to data end.<br>For the calculation method, refer to "3.1 Data format," "■ Command frame" and "● Calculation example of CRC-16." |

- **Response frame**




| Data name | Description |
|---|---|
| Unit no. | The values in the command frame are entered. |
| Function code | This is the function code received.<br>However, for a response frame in an abnormal state, an abnormal response will be represented by adding "H'80" to the function code received.<br>E.g.: Function code received = H'10<br>Function code within a response frame in an abnormal state = H'90 |
| Writing start address | This is a writing start address received. |
| Element count | This is an element count received. |
| CRC-16 | This is a check code that is calculated using the values from Unit no. to data end.<br>For the calculation method, refer to "3.1 Data format," "■ Command frame" and "● Calculation example of CRC-16." |

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- **Response code**

| Function code | Error code | Error name | Cause |
|---|---|---|---|
| H’90 | H’02 | Variable address error | The address for the writing start variable is abnormal.<br>The variable area number is wrong.<br>The address within the variable area is outside the range. |
| | H’03 | Variable data error | The element count and the number of data do not match.<br>Element count and the byte count do not match.<br>The writing data is outside the setting range. |
| | H’04 | Operation error | Writing operation is not possible. |
| H’10 | – | Successfully completed | No abnormality found |

## ● Example of command/response

The following is the writing example in case of changing the applicable circuit to single phase two-wire method.

(In case of Unit no.: H' 01)

"Applicable circuit: single phase two-wire"

- Writing start address: H' F000 writing data: H’00000000

Command: 01 10 F0 00 00 02 04 00 00 00 00 F7 AB(CRC-16)

Response: 01 10 F0 00 00 02 72 C8(CRC-16)

## ■ Operation command

This will be used for remote control of Model KM1/KE1.

- **Command frame**

| Unit no. | Function code. | Writing start address | | Writing data | |
|---|---|---|---|---|---|
| | H'06 | H'00 | H'00 | | |
| 1 | 1 | 2 | | 2 | 2 bytes |

- **Response frame**

| Unit no. | Function code. | Reading start address | | Reading data | CRC-16 |
|---|---|---|---|---|---|
| | H'06 | H'00 | H'00 | | |
| 1 | 1 | 2 | | 2 | 2 bytes |

(1) Writing start address

Set "0000" for the operation command.

(2) Command code and related information

The writing data is represented by 4 digits of a command code + related information

Operation commands are:

| Command code | Command description | Related information |
|---|---|---|
| 03 | Setting of total power consumption to zero | 00 |
| 04 | Switching to measurement mode | 00 |
| 07 | Switching to setting mode | 00 |
| 09 | Initialization of measurement history | 00 |
| | Initialization of setting values | 01 |
| | All initialization | 03 |
| | Initialization of alarm history | 04 |
| 10 | Reading of logging of instantaneous voltage drop (moving the reading pointer to the beginning of the stored data) | 00 |
| | Reading of logging of instantaneous voltage drop (the log data at the reading pointer location is read out. The reading pointer moves one step forward.) | 01 |
| | Reading of logging of instantaneous voltage drop ((The log data at the reading pointer location is read out, and the reading data is deleted from the memory. The reading pointer moves one step forward.) | 02 |
| 12 | Reset of each maximum measurement value | 00 |
| 13 | Reset of each minimum measurement value | 00 |
| 99 | Reset of software | 00 |

* The command code of "09" can be initialized only in setting mode.

(3) Response code

- Successfully completed

| Function code | Error code | Error name | Description |
|---|---|---|---|
| H'06 | – | Successfully completed | No abnormality found |

- An error occurred

| Function code | Error code | Error name | Description |
|---|---|---|---|
| H'86 | H'02 | Variable address error | The writing variable address is not "0000." |
| | H'03 | Variable data error | The writing data is abnormal.<br>The command mode and related information is incorrect. |
| | H'04 | Operation error | Writing operation is not possible. |

● Example of command/response

Below is the example of setting total power consumption to zero. (In case of Unit no.: H' 01)

Command for setting total power consumption to zero (command code "03," related information "00")

| | | | | | |
|---|---|---|---|---|---|
| Command | 01 | 06 | 00 00 | 03 00 | 89 3A(CRC-16) |
| Response | 01 | 06 | 00 00 | 03 00 | 89 3A(CRC-16) |

(5) Explanation on and precautions for each operation command

- Setting of total power consumption to zero
  Total power consumption will be reset to 0.
  Upon reset, the power consumption will be accumulated again.
- Switching to measurement mode
  Measurement mode becomes active.
  The settings changed in setting mode will be saved in EEPROM and the product will be reset when switching to measurement mode. After reset, the operation will be implemented with the settings changed.
- Switching to setting mode
  Setting mode becomes active.
  Implement respective settings after switching to setting mode.
- Initialization of measurement history
  All of measurement history (measurement logging data) will be initialized.
- Initialization of setting values
  All setting values will be restored to factory setting.
- All initialization
  Total power consumption will be set to zero, and measurement history, setting values and alarm history will be initialized.
- Initialization of alarm history
  Alarm history will be initialized.

- Reset of each maximum/minimum measurement value

  Each measurement maximum value and minimum value will be reset.

  | | |
  |---|---|
  | Reset of maximum value | At the time of reset, the value will be reset to 0 that is a minimum value. |
  | Reset of minimum value | At the time of reset, the value will be reset to a maximum value that is within the measurement range. |

- Reset of software

  The CPU will be reset and restored to the state at the time of power activation.

  No response will be returned only for this operation command (no service response PDU).

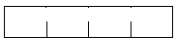
- Reading of logging data of instantaneous voltage drop

  The AD value of instantaneous voltage drop occurred first (converted to an effective value) can be read out.

  For the values to be read out, refer to P4 to 32.

  The following are the data formats:

Data (AD value)



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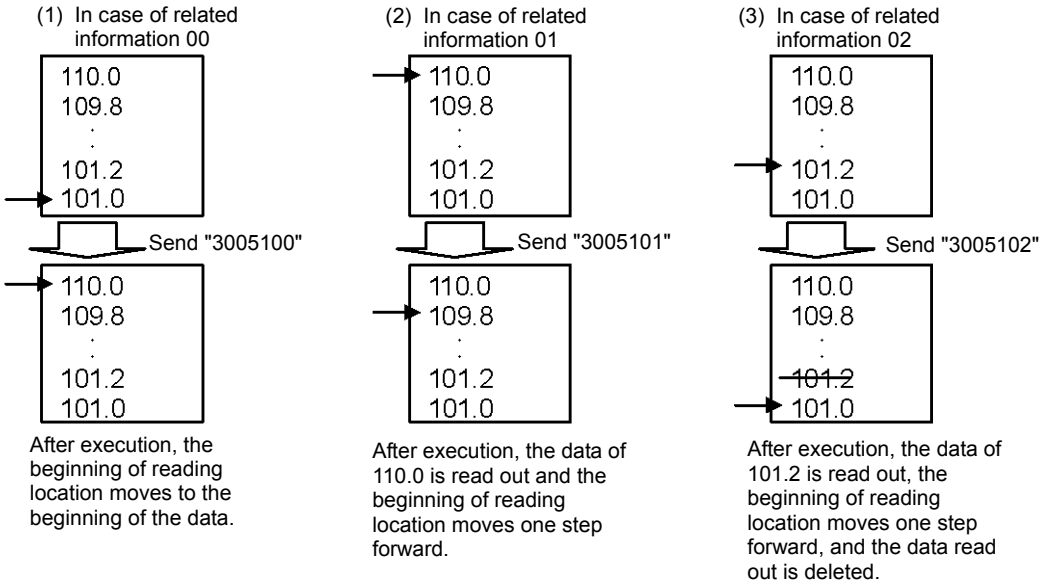
The difference in operation according to related information is:




Modbus

## ■ Echo back test

- **Command frame**

| Unit no. | Function code | Writing start address | | Test data | CRC-16 |
|---|---|---|---|---|---|
| | H'08 | H'00 | H'00 | | |
| 1 | 1 | 2 | | 2 | 2 bytes |

- **Response frame**

| Unit no. | Function code | Writing start address | | Test data | CRC-16 |
|---|---|---|---|---|---|
| | H'08 | H'00 | H'00 | | |
| 1 | 1 | 2 | | 2 | 2 bytes |

- Upon successful completion, the response with the same description as the command will be returned.

(1) Test data

Any data is represented by hex numbers with 2 bytes.

(2) Response code

| Function code | Error code | Name | Description |
|---|---|---|---|
| H'88 | H'03 | Variable data error | The fixed value following the function code is not "H' 00, H' 00." |
| H'08 | – | Successfully completed | No abnormality found |

● Example of command/response

Below is the example of echo back test.

(When the test data is H'1234, Unit no. : H'01)

| | | | | | |
|---|---|---|---|---|---|
| Command: | 01 | 08 | 00 00 | 12 34 | ED 7C(CRC-16) |
| Response: | 01 | 08 | 00 00 | 12 34 | ED 7C(CRC-16) |

# Chapter 4 List of Communication Addresses

This chapter lists each type of communication data via CompoWay/F and Modbus.

# 4.1 List of variable areas

## ●Communication data

Each setting value is represented by a hex number; a negative number being represented as a 2's complement and decimals being represented by hex numbers ignoring decimal points.

## ●List of variable areas

- The values represented by hex numbers in the setting value column are the setting range for CompoWay/F, and the values in brackets are the actual setting range. For written expression, refer to each targeted setting item.

## ●Instantaneous value

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Voltage 1 (V) *1 | C0 | 0000 | 0000 | H'00000000 - H'000F423F (0.0 - 99999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 2 (V) *1 | C0 | 0001 | 0002 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 3 (V) *1 | C0 | 0002 | 0004 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 4 (V) *1 | C0 | 0003 | 0006 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 5 (V) *1 | C0 | 0004 | 0008 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 6 (V) *1 | C0 | 0005 | 000A | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Current 1 (A) *2 | C0 | 0006 | 000C | H'00000000 - H'0098967F (0.000 - 9999.999) * 3 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 2 (A) *2 | C0 | 0007 | 000E | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 3 (A) *2 | C0 | 0008 | 0010 | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 4 (A) *2 | C0 | 0009 | 0012 | | | | | | | | | ○ | | |
| Current 5 (A) *2 | C0 | 000A | 0014 | | | | | | | | | ○ | | |
| Current 6 (A) *2 | C0 | 000B | 0016 | | | | | | | | | ○ | | |
| Current 7 (A) *2 | C0 | 000C | 0018 | | | ○ | | | | | | ○ | | |
| Current 8 (A) *2 | C0 | 000D | 001A | | | ○ | | | | | | ○ | | |
| Current 9 (A) *2 | C0 | 000E | 001C | | | ○ | | | | | | ○ | | |
| Current 10 (A) *2 | C0 | 000F | 001E | | | | | | | | | ○ | | |
| Current 11 (A) *2 | C0 | 0010 | 0020 | | | | | | | | | ○ | | |
| Current 12 (A) *2 | C0 | 0011 | 0022 | | | | | | | | | ○ | | |
| Power factor 1 *3 | C0 | 0012 | 0024 | H'FFFFFF9C - H'00000064 (-1.00 - 1.00) * 2 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 2 *3 | C0 | 0013 | 0026 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 3 *3 | C0 | 0014 | 0028 | | ○ | | | ○ | ○ | | | ○ | | |
| Power factor 4 *3 | C0 | 0015 | 002A | | | | | | | | | ○ | | |
| Power factor 5 *3 | C0 | 0016 | 002C | | | ○ | | | | | | ○ | | |
| Power factor 6 *3 | C0 | 0017 | 002E | | | ○ | | | | | | ○ | | |
| Power factor 7 *3 | C0 | 0018 | 0030 | | | | | | | | | ○ | | |
| Power factor 8 *3 | C0 | 0019 | 0032 | | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Frequency 1 (Hz) *4 | C0 | 001A | 0034 | H' 000001C2- H' 0000028A (45.0 - 65.0) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Frequency 2 (Hz) *4 | C0 | 001B | 0036 | | | ○ | | | | | | | | |
| Active power 1 (W) *3 | C0 | 001C | 0038 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 2 (W) *3 | C0 | 001D | 003A | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 3 (W) *3 | C0 | 001E | 003C | | ○ | | | ○ | ○ | | | ○ | | |
| Active power 4 (W) *3 | C0 | 001F | 003E | | | | | | | | | ○ | | |
| Active power 5 (W) *3 | C0 | 0020 | 0040 | | | ○ | | | | | | ○ | | |
| Active power 6 (W) *3 | C0 | 0021 | 0042 | | | ○ | | | | | | ○ | | |
| Active power 7 (W) *3 | C0 | 0022 | 0044 | | | | | | | | | ○ | | |
| Active power 8 (W) *3 | C0 | 0023 | 0046 | | | | | | | | | ○ | | |
| Reactive power 1 (var) *3 | C0 | 0024 | 0048 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 2 (var) *3 | C0 | 0025 | 004A | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 3 (var) *3 | C0 | 0026 | 004C | | ○ | | | ○ | ○ | | | ○ | | |
| Reactive power 4 (var) *3 | C0 | 0027 | 004E | | | | | | | | | ○ | | |
| Reactive power 5 (var) *3 | C0 | 0028 | 0050 | | | ○ | | | | | | ○ | | |
| Reactive power 6 (var) *3 | C0 | 0029 | 0052 | | | ○ | | | | | | ○ | | |
| Reactive power 7 (var) *3 | C0 | 002A | 0054 | | | | | | | | | ○ | | |
| Reactive power 8 (var) *3 | C0 | 002B | 0056 | | | | | | | | | ○ | | |
| Temperature 1 (°C or °F) *5 | C0 | 002C | 0058 | H'FFFFFDBC - H'00000848 (-58.0 - 212.0) * 1 digit after the decimal point fixed * Within -50.0 - 100.0 degrees C and -58.0 - 212.0 degrees F | | | ○ | | | | | | | |
| Temperature 2 (°C or °F) *5 | C0 | 002D | 005A | | | | | | | | | | | |
| Temperature 3 (°C or °F) *5 | C0 | 002E | 005C | | | | | | | | | | | |
| Temperature 4 (°C or °F) *5 | C0 | 002F | 005E | | | | | | | | | | | |
| Temperature 5 (°C or °F) *5 | C0 | 0030 | 0060 | | | | | | | | | | | |
| Temperature 6 (°C or °F) *5 | C0 | 0031 | 0062 | | | | | | | | | | | |
| Temperature 7 (°C or °F) *5 | C0 | 0032 | 0064 | | | | | | | | | | | |
| Temperature 8 (°C or °F) *5 | C0 | 0033 | 0066 | | | | | | | | | | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Earth leakage (Io) 1 (mA) *6 | C0 | 0034 | 0068 | H’00000000-H’000007D0 (0-2000) | | | | ○ | | | | | ○ | |
| Earth leakage (Io) 2 (mA) *6 | C0 | 0035 | 006A | | | | | | | | | | ○ | |
| Earth leakage (Io) 3 (mA) *6 | C0 | 0036 | 006C | | | | | | | | | | ○ | |
| Earth leakage (Io) 4 (mA) *6 | C0 | 0037 | 006E | | | | | | | | | | ○ | |
| Earth leakage (Io) 5 (mA) *6 | C0 | 0038 | 0070 | | | | | | | | | | ○ | |
| Earth leakage (Io) 6 (mA) *6 | C0 | 0039 | 0072 | | | | | | | | | | ○ | |
| Earth leakage (Io) 7 (mA) *6 | C0 | 003A | 0074 | | | | | | | | | | ○ | |
| Earth leakage (Io) 8 (mA) *6 | C0 | 003B | 0076 | | | | | | | | | | ○ | |
| Integrated effective power amount 1 (Wh) | C0 | 0080 | 0100 | H’0000000-H’3B9AC9FF (0-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated effective power amount 2 (Wh) | C0 | 0081 | 0102 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated effective power amount 3 (Wh) | C0 | 0082 | 0104 | | ○ | | | ○ | ○ | | | ○ | | |
| Integrated effective power amount 4 (Wh) | C0 | 0083 | 0106 | | | | | | | | | ○ | | |
| Integrated effective power amount 5 (Wh) | C0 | 0084 | 0108 | | | ○ | | | | | | ○ | | |
| Integrated effective power amount 6 (Wh) | C0 | 0085 | 010A | | | ○ | | | | | | ○ | | |
| Integrated effective power amount 7 (Wh) | C0 | 0086 | 010C | | | | | | | | | ○ | | |
| Integrated effective power amount 8 (Wh) | C0 | 0087 | 010E | | | | | | | | | ○ | | |
| Integrated regeneration power amount 1 (Wh) | C0 | 0088 | 0110 | H’0000000-H’3B9AC9FF (0-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated regeneration power amount 2 (Wh) | C0 | 0089 | 0112 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated regeneration power amount 3 (Wh) | C0 | 008A | 0114 | | ○ | | | ○ | ○ | | | ○ | | |
| Integrated regeneration power amount 4 (Wh) | C0 | 008B | 0116 | | | | | | | | | ○ | | |
| Integrated regeneration power amount 5 (Wh) | C0 | 008C | 0118 | | | ○ | | | | | | ○ | | |
| Integrated regeneration power amount 6 (Wh) | C0 | 008D | 011A | | | ○ | | | | | | ○ | | |
| Integrated regeneration power amount 7 (Wh) | C0 | 008E | 011C | | | | | | | | | ○ | | |
| Integrated regeneration power amount 8 (Wh) | C0 | 008F | 011E | | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Integration progression inactive power amount 1 (varh) | C0 | 0090 | 0120 | H’0000000-H’3B9AC9FF (0-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integration progression inactive power amount 2 (varh) | C0 | 0091 | 0122 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integration progression inactive power amount 3 (varh) | C0 | 0092 | 0124 | | ○ | | | ○ | ○ | | | ○ | | |
| Integration progression inactive power amount 4 (varh) | C0 | 0093 | 0126 | | | | | | | | | ○ | | |
| Integration progression inactive power amount 5 (varh) | C0 | 0094 | 0128 | | | ○ | | | | | | ○ | | |
| Integration progression inactive power amount 6 (varh) | C0 | 0095 | 012A | | | ○ | | | | | | ○ | | |
| Integration progression inactive power amount 7 (varh) | C0 | 0096 | 012C | | | | | | | | | ○ | | |
| Integration progression inactive power amount 8 (varh) | C0 | 0097 | 012E | | | | | | | | | ○ | | |
| Integrated delayed inactive power amount 1 (varh) | C0 | 0098 | 0130 | H’0000000-H’3B9AC9FF (0-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated delayed inactive power amount 2 (varh) | C0 | 0099 | 0132 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated delayed inactive power amount 3 (varh) | C0 | 009A | 0134 | | ○ | | | ○ | ○ | | | ○ | | |
| Integrated delayed inactive power amount 4 (varh) | C0 | 009B | 0136 | | | | | | | | | ○ | | |
| Integrated delayed inactive power amount 5 (varh) | C0 | 009C | 0138 | | | ○ | | | | | | ○ | | |
| Integrated delayed inactive power amount 6 (varh) | C0 | 009D | 013A | | | ○ | | | | | | ○ | | |
| Integrated delayed inactive power amount 7 (varh) | C0 | 009E | 013C | | | | | | | | | ○ | | |
| Integrated delayed inactive power amount 8 (varh) | C0 | 009F | 013E | | | | | | | | | ○ | | |
| Integrated total Inactive power amount 1(varh) | C0 | 00A0 | 0140 | H’0000000-H’3B9AC9FF (0-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated total Inactive power amount 2 (varh) | C0 | 00A1 | 0142 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Integrated total Inactive power amount 3 (varh) | C0 | 00A2 | 0144 | | ○ | | | ○ | ○ | | | ○ | | |
| Integrated total Inactive power amount 4 (varh) | C0 | 00A3 | 0146 | | | | | | | | | ○ | | |
| Integrated total Inactive power amount 5 (varh) | C0 | 00A4 | 0148 | | | ○ | | | | | | ○ | | |
| Integrated total Inactive power amount 6 (varh) | C0 | 00A5 | 014A | | | ○ | | | | | | ○ | | |
| Integrated total Inactive power amount 7 (varh) | C0 | 00A6 | 014C | | | | | | | | | ○ | | |
| Integrated total Inactive power amount 8 (varh) | C0 | 00A7 | 014E | | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 3-STATE HIGH Integrated power amount 1 (Wh) | C0 | 0100 | 0200 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated time 1(s) | C0 | 0101 | 0202 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated power amount 2 (Wh) | C0 | 0102 | 0204 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated time 2 (s) | C0 | 0103 | 0206 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated power amount 3 (Wh) | C0 | 0104 | 0208 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated time 3(s) | C0 | 0105 | 020A | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE HIGH Integrated power amount 4 (Wh) | C0 | 0106 | 020C | H'00000000-H'3B9AC9FF (00000000-999999999) | | ○ | | | | | | | | |
| 3-STATE HIGH Integrated time 4 (s) | C0 | 0107 | 020E | H'00000000-H'0098967F (00000000-9999999) | | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated power amount 1 (Wh) | C0 | 0108 | 0210 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated time 1(s) | C0 | 0109 | 0212 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated power amount 2 (Wh) | C0 | 010A | 0214 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated time 2 (s) | C0 | 010B | 0216 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated power amount 3 (Wh) | C0 | 010C | 0218 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated time 3(s) | C0 | 010D | 021A | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated power amount 4 (Wh) | C0 | 010E | 021C | H'00000000-H'3B9AC9FF (00000000-999999999) | | ○ | | | | | | | | |
| 3-STATE MIDDLE Integrated time 4 (s) | C0 | 010F | 021E | H'00000000-H'0098967F (00000000-9999999) | | ○ | | | | | | | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 3-STATE LOW Integrated power amount 1 (Wh) | C0 | 0110 | 0220 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated time 1(s) | C0 | 0111 | 0222 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated power amount 2 (Wh) | C0 | 0112 | 0224 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated time 2 (s) | C0 | 0113 | 0226 | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated power amount 3 (Wh) | C0 | 0114 | 0228 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated time 3(s) | C0 | 0115 | 022A | H'00000000-H'0098967F (00000000-9999999) | ○ | ○ | | | | | | | | |
| 3-STATE LOW Integrated power amount 4 (Wh) | C0 | 0116 | 022C | H'00000000-H'3B9AC9FF (00000000-999999999) | | ○ | | | | | | | | |
| 3-STATE LOW Integrated time 4 (s) | C0 | 0117 | 022E | H'00000000-H'0098967F (00000000-9999999) | | ○ | | | | | | | | |
| ON time of pulse enter 1 (s) | C0 | 0118 | 0230 | H'00000000-H'05F5E0FF (00000000-99999999) | | | ○ | | | | | | | |
| ON time of pulse enter 2 (s) | C0 | 0119 | 0232 | | | | ○ | | | | | | | |
| ON time of pulse enter 3 (s) | C0 | 011A | 0234 | | | | ○ | | | | | | | |
| ON time of pulse enter 4 (s) | C0 | 011B | 0236 | | | | ○ | | | | | | | |
| ON time of pulse enter 5 (s) | C0 | 011C | 0238 | | | | ○ | | | | | | | |
| ON time of pulse enter 6 (s) | C0 | 011D | 023A | | | | ○ | | | | | | | |
| ON time of pulse enter 7 (s) | C0 | 011E | 023C | | | | ○ | | | | | | | |
| Pulse entering count 1 (time(s)) | C0 | 011F | 023E | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse entering count 2 (time(s)) | C0 | 0120 | 0240 | | | | ○ | | | | | | | |
| Pulse entering count 3 (time(s)) | C0 | 0121 | 0242 | | | | ○ | | | | | | | |
| Pulse entering count 4 (time(s)) | C0 | 0122 | 0244 | | | | ○ | | | | | | | |
| Pulse entering count 5 (time(s)) | C0 | 0123 | 0246 | | | | ○ | | | | | | | |
| Pulse entering count 6 (time(s)) | C0 | 0124 | 0248 | | | | ○ | | | | | | | |
| Pulse entering count 7 (time(s)) | C0 | 0125 | 024A | | | | ○ | | | | | | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Power original unit 1 (kWh/time(s)) | C0 | 0126 | 024C | H' 00000000 - H' 05F5E0FF (0.000 - 99999.999) * 3 digits after the decimal point fixed | ○ | ○ | | | | | | | | |
| Power original unit 2 (kWh/time(s)) | C0 | 0127 | 024E | | ○ | ○ | | | | | | | | |
| Power original unit 3 (kWh/time(s)) | C0 | 0128 | 0250 | | ○ | ○ | | | | | | | | |
| Power original unit 4 (kWh/time(s)) | C0 | 0129 | 0252 | | | ○ | | | | | | | | |
| Total power consumption converted value 1_1 * 7 | C0 | 012A | 0254 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 1_2 * 7 | C0 | 012B | 0256 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 2_1 * 7 | C0 | 012C | 0258 | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | ○ | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 2_2 * 7 | C0 | 012D | 025A | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 3_1 * 7 | C0 | 012E | 025C | H'00000000-H'3B9AC9FF (00000000-999999999) | ○ | | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 3_2 * 7 | C0 | 012F | 025E | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | ○ | | | ○ | ○ | | | ○ | | |
| Total power consumption converted value 4_1 * 7 | C0 | 0130 | 0260 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | | | | | | ○ | | |
| Total power consumption converted value 4_2 * 7 | C0 | 0131 | 0262 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | | | | | | ○ | | |
| Total power consumption converted value 5_1 * 7 | C0 | 0132 | 0264 | H'00000000-H'3B9AC9FF (00000000-999999999) | | ○ | | | | | | ○ | | |
| Total power consumption converted value 5_2 * 7 | C0 | 0133 | 0266 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | ○ | | | | | | ○ | | |
| Total power consumption converted value 6_1 * 7 | C0 | 0134 | 0268 | H'00000000-H'3B9AC9FF (00000000-999999999) | | ○ | | | | | | ○ | | |
| Total power consumption converted value 6_2 * 7 | C0 | 0135 | 026A | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | ○ | | | | | | ○ | | |
| Total power consumption converted value 7_1 * 7 | C0 | 0136 | 026C | H'00000000-H'3B9AC9FF (00000000-999999999) | | | | | | | | ○ | | |
| Total power consumption converted value 7_2 * 7 | C0 | 0137 | 026E | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Total power consumption converted value 8_1 * 7 | C0 | 0138 | 0270 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | | | | | | ○ | | |
| Total power consumption converted value 8_2 * 7 | C0 | 0139 | 0272 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | | | | | | ○ | | |
| Pulse converted value 1_1 *7 | C0 | 013A | 0274 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 1_2 *7 | C0 | 013B | 0276 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 2_1 *7 | C0 | 013C | 0278 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 2_2 *7 | C0 | 013D | 027A | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 3_1 *7 | C0 | 013E | 027C | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 3_2 *7 | C0 | 013F | 027E | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 4_1 *7 | C0 | 0140 | 0280 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 4_2 *7 | C0 | 0141 | 0282 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 5_1 *7 | C0 | 0142 | 0284 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 5_2 *7 | C0 | 0143 | 0286 | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 6_1 *7 | C0 | 0144 | 0288 | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 6_2 *7 | C0 | 0145 | 028A | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |
| Pulse converted value 7_1 *7 | C0 | 0146 | 028C | H'00000000-H'3B9AC9FF (00000000-999999999) | | | ○ | | | | | | | |
| Pulse converted value 7_2 *7 | C0 | 0147 | 028E | H' 00000000 - H' 3B9AC9FF (0.000 - 999999.999) * 3 digits after the decimal point fixed | | | ○ | | | | | | | |

*1 The items for Voltage 1 to 6 that can be read out through the connection method are:

| Connection method | Electrical system 1 | | | Electrical system 2 | | |
|---|---|---|---|---|---|---|
| | Voltage 1 | Voltage 2 | Voltage 3 | Voltage 4 | Voltage 5 | Voltage 6 |
| Single phase 2-wire method | VLN | – | – | VLN | – | – |
| Single phase 3-wire method | VRN | VTN | VRT(*) | VRN | VTN | VRT(*) |
| Three phase 3-wire method | VRS | VST | VTR | VRS | VST | VTR |
| Three phase 4-wire method (other than PMU2) | VRN | VSN | VTN | VRS(*) | VST(*) | VTR(*) |

"-"refers to a reading value of "0."

For any model other than PMU2, the values converted from phase voltage (Voltage 1 - 3) to line voltage can be read out for three-phase 4-wire Voltage 4 -6.

* The reading value at the time of simplified measurement is "0."

*2 The items for Voltage 1 to 12 that can be read out through the connection method are:

| | | Other than CTD8E | | | | CTD8E | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Single phase 2-wire method | Single phase 3-wire method | Three phase 3-wire method | Three phase 4-wire method | Single phase 2-wire method | Single phase 3-wire method | Three phase 3-wire method | Three phase 4-wire method |
| Measurement Block 1 | Current 1 | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) | IR (Circuit 1) |
| | Current 2 | IR (Circuit 2) | IN (Circuit 1) | IS (Circuit 1) | IS (Circuit 1) | IR (Circuit 2) | IN (Circuit 1) | IS (Circuit 1) | IS (Circuit 1) |
| | Current 3 | IR (Circuit 3) | IT (Circuit 1) | IT (Circuit 1) | IT (Circuit 1) | IR (Circuit 3) | IT (Circuit 1) | IT (Circuit 1) | IT (Circuit 1) |
| | Current 4 | – | – | – | – | IR (Circuit 4) | IR (Circuit 2) | IR (Circuit 2) | IR (Circuit 2) |
| | Current 5 | – | – | – | – | – | IN (Circuit 2) | IS (Circuit 2) | IS (Circuit 2) |
| | Current 6 | – | – | – | – | – | IT (Circuit 2) | IT (Circuit 2) | IT (Circuit 2) |
| Measurement Block 2 | Current 7 | IR (Circuit 3) | IR (Circuit 2) | IR (Circuit 2) | IR (Circuit 2) | IR (Circuit 5) | IR (Circuit 3) | IR (Circuit 3) | IR (Circuit 3) |
| | Current 8 | IR (Circuit 4) | IN (Circuit 2) | IS (Circuit 2) | IS (Circuit 2) | IR (Circuit 6) | IN (Circuit 3) | IS (Circuit 3) | IS (Circuit 3) |
| | Current 9 | – | IT (Circuit 2) | IT (Circuit 2) | IT (Circuit 2) | IR (Circuit 7) | IT (Circuit 3) | IT (Circuit 3) | IT (Circuit 3) |
| | Current 10 | – | – | – | – | IR (Circuit 8) | IR (Circuit 4) | IR (Circuit 4) | IR (Circuit 4) |
| | Current 11 | – | – | – | – | – | IN (Circuit 4) | IS (Circuit 4) | IS (Circuit 4) |
| | Current 12 | – | – | – | – | – | IT (Circuit 4) | IT (Circuit 4) | IT (Circuit 4) |

"-"refers to a reading value of "0."

For Model PMU2, electric currents 3 cannot be read out through single phase 2-wire. In this case, the currents for Circuit 3 and 4 can be read out using electric currents 7 and 8.

*3 The items for Active power 1 to 8 that can be read out through the connection method are: (Reactive power and Power factor can be read out using the same number for Active power.)

- Other than CTD8E

| | Other than PMU2 | | | | | | PMU2A | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Single phase 2-wire method | | Single phase 3-wire method/three phase 3-wire method | | Three phase 4-wire method | | Single phase 2-wire method | | Single phase 3-wire method/three phase 3-wire method | |
| Measurement Block 1 | CT input 1 | Active power 1 | CT input 1 and 3 | Active power 1 | CT input 1,2 and 3 | Active power 1 | CT input 1 | Active power 1 | CT input 1and 2 | Active power 1 |
| | CT input 2 | Active power 2 | – | – | – | – | CT input 2 | Active power 2 | – | – |
| | CT input 3 | Active power 3 | – | – | – | – | – | – | – | – |
| | – | – | – | – | – | – | – | – | – | – |
| Measurement Block 2 | – | – | – | – | – | – | CT input 3 | Active power 5 | CT input 3 and 4 | Active power 5 |
| | – | – | – | – | – | – | CT input 4 | Active power 6 | – | – |
| | – | – | – | – | – | – | – | – | – | – |
| | – | – | – | – | – | – | – | – | – | – |

- CTD8E

| | Single phase 2-wire method | | Single phase 3-wire method/three phase 3-wire method | | Three phase 4-wire method | |
|---|---|---|---|---|---|---|
| Measurement Block 1 | CT input 1 | Active power 1 | CT input 1and 2 | Active power 1 | CT input 1,2 and 3 | Active power 1 |
| | CT input 2 | Active power 2 | CT input 3 and 4 | Active power 2 | – | – |
| | CT input 3 | Active power 3 | – | – | – | – |
| | CT input 4 | Active power 4 | – | – | – | – |
| Measurement Block 2 | CT input 5 | Active power 5 | CT input 5 and 6 | Active power 5 | CT input 5,6 and 7 | Active power 5 |
| | CT input 6 | Active power 6 | CT input 7 and 8 | Active power 6 | – | – |
| | CT input 7 | Active power 7 | – | – | – | – |
| | CT input 8 | Active power 8 | – | – | – | – |

*4 Frequency 1 reads the frequency for electrical system 1, and frequency 2 reads the frequency for electrical system 2.

*5 The reading unit for temperature is the value of the unit set. The temperature is converted from F to C as follows. In case of both values required, convert the values in the high-order software.

F (Fahrenheit) = 9/5 x C (Celsius) + 32 + Correction value

C (Celsius) = 5/9 x (F (Fahrenheit) – 32) + Correction value

*6 For PGR1C, earth leakage 1 reads out the data of ZCT input. For ZCT8E, earth leakage 2 reads out the data of ZCT input.

*7 Each converted value is able to read two values: a value without a decimal point (integral value) and one with a decimal point (fractional value).
The reading values are as follows. Read out one of the values according to the converted coefficient and input value.
Also, both integral and fractional values are based on the same value, and in case of reading the value as an integral value, the value will be round off.
In case of reading a fractional value, the upper limit is read out for the value exceeding the representation range.

| | Reading value | Range of reading values |
|---|---|---|
| Conversion value □_1 | Integral value | 0-999999999(H'0-H'3B9AC9FF) |
| Conversion value □_2 | Fractional value | 0 - 999999.999(H'0 - H' 3B9AC9FF)<br>Thousandth digit fixed |

*8 Each of total power consumption, integrated time and count value will be reset to 0 when reaching the upper limit, and the integration and count will start again.
For each converted value, only the upper value may be read out until the original values are reset to 0 due to the setting of converted coefficients.

*9 Each value after the connection is restored
The measurement items below are stored in the internal memory in every 5 minutes. Therefore, the last value stored in every 5 minutes, instead of the value right before the disconnection, is read out when the power is activated to carry on the measurement.
Each of total power consumption, pulse input ON time, pulse input count, power original unit, 3-STATE and integrated time

## ● Maximum value

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Voltage 1 (V) *1 | C0 | 0180 | 0300 | H' 00000000 - "000F423F (0.0 - 99999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 2 (V) *1 | C0 | 0181 | 0302 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 3 (V) *1 | C0 | 0182 | 0304 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 4 (V) *1 | C0 | 0183 | 0306 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 5 (V) *1 | C0 | 0184 | 0308 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 6 (V) *1 | C0 | 0185 | 030A | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Current 1 (A) *2 | C0 | 0186 | 030C | H'00000000 - H'0098967F (0.000 - 9999.999) * 3 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 2 (A) *2 | C0 | 0187 | 030E | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 3 (A) *2 | C0 | 0188 | 0310 | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 4 (A) *2 | C0 | 0189 | 0312 | | | | | | | | | ○ | | |
| Current 5 (A) *2 | C0 | 018A | 0314 | | | | | | | | | ○ | | |
| Current 6 (A) *2 | C0 | 018B | 0316 | | | | | | | | | ○ | | |
| Current 7 (A) *2 | C0 | 018C | 0318 | | | ○ | | | | | | ○ | | |
| Current 8 (A) *2 | C0 | 018D | 031A | | | ○ | | | | | | ○ | | |
| Current 9 (A) *2 | C0 | 018E | 031C | | | ○ | | | | | | ○ | | |
| Current 10 (A) *2 | C0 | 018F | 031E | | | | | | | | | ○ | | |
| Current 11 (A) *2 | C0 | 0190 | 0320 | | | | | | | | | ○ | | |
| Current 12 (A) *2 | C0 | 0191 | 0322 | | | | | | | | | ○ | | |
| Power factor 1 *3 | C0 | 0192 | 0324 | H'FFFFFF9C - H'00000064 (-1.00 - 1.00) * 2 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 2 *3 | C0 | 0193 | 0326 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 3 *3 | C0 | 0194 | 0328 | | ○ | | | ○ | ○ | | | ○ | | |
| Power factor 4 *3 | C0 | 0195 | 032A | | | | | | | | | ○ | | |
| Power factor 5 *3 | C0 | 0196 | 032C | | | ○ | | | | | | ○ | | |
| Power factor 6 *3 | C0 | 0197 | 032E | | | ○ | | | | | | ○ | | |
| Power factor 7 *3 | C0 | 0198 | 0330 | | | | | | | | | ○ | | |
| Power factor 8 *3 | C0 | 0199 | 0332 | | | | | | | | | ○ | | |
| Active power 1 (W) *3 | C0 | 019A | 0334 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 2 (W) *3 | C0 | 019B | 0336 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 3 (W) *3 | C0 | 019C | 0338 | | ○ | | | ○ | ○ | | | ○ | | |
| Active power 4 (W) *3 | C0 | 019D | 033A | | | | | | | | | ○ | | |
| Active power 5 (W) *3 | C0 | 019E | 033C | | | ○ | | | | | | ○ | | |
| Active power 6 (W) *3 | C0 | 019F | 033E | | | ○ | | | | | | ○ | | |
| Active power 7 (W) *3 | C0 | 01A0 | 0340 | | | | | | | | | ○ | | |
| Active power 8 (W) *3 | C0 | 01A1 | 0342 | | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Reactive power 1 (var) *3 | C0 | 01A2 | 0344 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 2 (var) *3 | C0 | 01A3 | 0346 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 3 (var) *3 | C0 | 01A4 | 0348 | | ○ | | | ○ | ○ | | | ○ | | |
| Reactive power 4 (var) *3 | C0 | 01A5 | 034A | | | | | | | | | ○ | | |
| Reactive power 5 (var) *3 | C0 | 01A6 | 034C | | | ○ | | | | | | ○ | | |
| Reactive power 6 (var) *3 | C0 | 01A7 | 034E | | | ○ | | | | | | ○ | | |
| Reactive power 7 (var) *3 | C0 | 01A8 | 0350 | | | | | | | | | ○ | | |
| Reactive power 8 (var) *3 | C0 | 01A9 | 0352 | | | | | | | | | ○ | | |
| Temperature 1 (°C or °F) *5 | C0 | 01AA | 0354 | H'FFFFFDBC - H'00000848 (-58.0 - 212.0) * 1 digit after the decimal point fixed * Within -50.0 - 100.0 degrees C and -58.0 - 212.0 degrees F | | | ○ | | | | | | | |
| Temperature 2 (°C or °F) *5 | C0 | 01AB | 0356 | | | | | | | | | | | |
| Temperature 3 (°C or °F) *5 | C0 | 01AC | 0358 | | | | | | | | | | | |
| Temperature 4 (°C or °F) *5 | C0 | 01AD | 035A | | | | | | | | | | | |
| Temperature 5 (°C or °F) *5 | C0 | 01AE | 035C | | | | | | | | | | | |
| Temperature 6 (°C or °F) *5 | C0 | 01AF | 035E | | | | | | | | | | | |
| Temperature 7 (°C or °F) *5 | C0 | 01B0 | 0360 | | | | | | | | | | | |
| Temperature 8 (°C or °F) *5 | C0 | 01B1 | 0362 | | | | | | | | | | | |
| Earth leakage (Io) 1 (mA) *6 | C0 | 01B2 | 0364 | H'00000000-H'000007D0 (0-2000) | | | | ○ | | | | | ○ | |
| Earth leakage (Io) 2 (mA) *6 | C0 | 01B3 | 0366 | | | | | | | | | | ○ | |
| Earth leakage (Io) 3 (mA) *6 | C0 | 01B4 | 0368 | | | | | | | | | | ○ | |
| Earth leakage (Io) 4 (mA) *6 | C0 | 01B5 | 036A | | | | | | | | | | ○ | |
| Earth leakage (Io) 5 (mA) *6 | C0 | 01B6 | 036C | | | | | | | | | | ○ | |
| Earth leakage (Io) 6 (mA) *6 | C0 | 01B7 | 036E | | | | | | | | | | ○ | |
| Earth leakage (Io) 7 (mA) *6 | C0 | 01B8 | 0370 | | | | | | | | | | ○ | |
| Earth leakage (Io) 8 (mA) *6 | C0 | 01B9 | 0372 | | | | | | | | | | ○ | |

*1 - *3, *5 - *6 ● Refer to the note at instantaneous value.

## ● Minimum value

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Voltage 1 (V) *1 | C0 | 0200 | 0400 | H' 00000000 - "000F423F (0.0 - 99999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 2 (V) *1 | C0 | 0201 | 0402 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 3 (V) *1 | C0 | 0202 | 0404 | | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Voltage 4 (V) *1 | C0 | 0203 | 0406 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 5 (V) *1 | C0 | 0204 | 0408 | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Voltage 6 (V) *1 | C0 | 0205 | 040A | | ○*1 | ○ | | ○*1 | ○*1 | ○*1 | ○*1 | | | |
| Current 1 (A) *2 | C0 | 0206 | 040C | H'00000000 - H'0098967F (0.000 - 9999.999) * 3 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 2 (A) *2 | C0 | 0207 | 040E | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 3 (A) *2 | C0 | 0208 | 0410 | | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Current 4 (A) *2 | C0 | 0209 | 0412 | | | | | | | | | ○ | | |
| Current 5 (A) *2 | C0 | 020A | 0414 | | | | | | | | | ○ | | |
| Current 6 (A) *2 | C0 | 020B | 0416 | | | | | | | | | ○ | | |
| Current 7 (A) *2 | C0 | 020C | 0418 | | | ○ | | | | | | ○ | | |
| Current 8 (A) *2 | C0 | 020D | 041A | | | ○ | | | | | | ○ | | |
| Current 9 (A) *2 | C0 | 020E | 041C | | | ○ | | | | | | ○ | | |
| Current 10 (A) *2 | C0 | 020F | 041E | | | | | | | | | ○ | | |
| Current 11 (A) *2 | C0 | 0210 | 0420 | | | | | | | | | ○ | | |
| Current 12 (A) *2 | C0 | 0211 | 0422 | | | | | | | | | ○ | | |
| Power factor 1 *3 | C0 | 0212 | 0424 | H'FFFFFF9C - H'00000064 (-1.00 - 1.00) * 2 digits after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 2 *3 | C0 | 0213 | 0426 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Power factor 3 *3 | C0 | 0214 | 0428 | | ○ | | | ○ | ○ | | | ○ | | |
| Power factor 4 *3 | C0 | 0215 | 042A | | | | | | | | | ○ | | |
| Power factor 5 *3 | C0 | 0216 | 042C | | | ○ | | | | | | ○ | | |
| Power factor 6 *3 | C0 | 0217 | 042E | | | ○ | | | | | | ○ | | |
| Power factor 7 *3 | C0 | 0218 | 0430 | | | | | | | | | ○ | | |
| Power factor 8 *3 | C0 | 0219 | 0432 | | | | | | | | | ○ | | |
| Active power 1 (W) *3 | C0 | 021A | 0434 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 2 (W) *3 | C0 | 021B | 0436 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Active power 3 (W) *3 | C0 | 021C | 0438 | | ○ | | | ○ | ○ | | | ○ | | |
| Active power 4 (W) *3 | C0 | 021D | 043A | | | | | | | | | ○ | | |
| Active power 5 (W) *3 | C0 | 021E | 043C | | | ○ | | | | | | ○ | | |
| Active power 6 (W) *3 | C0 | 021F | 043E | | | ○ | | | | | | ○ | | |
| Active power 7 (W) *3 | C0 | 0220 | 0440 | | | | | | | | | ○ | | |
| Active power 8 (W) *3 | C0 | 0221 | 0442 | | | | | | | | | ○ | | |

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Reactive power 1 (var) *3 | C0 | 0222 | 0444 | H'C4653601- H'3B9AC9FF (-99999999.9 - 99999999.9) * 1 digit after the decimal point fixed | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 2 (var) *3 | C0 | 0223 | 0446 | | ○ | ○ | | ○ | ○ | | | ○ | | |
| Reactive power 3 (var) *3 | C0 | 0224 | 0448 | | ○ | | | ○ | ○ | | | ○ | | |
| Reactive power 4 (var) *3 | C0 | 0225 | 044A | | | | | | | | | ○ | | |
| Reactive power 5 (var) *3 | C0 | 0226 | 044C | | | ○ | | | | | | ○ | | |
| Reactive power 6 (var) *3 | C0 | 0227 | 044E | | | ○ | | | | | | ○ | | |
| Reactive power 7 (var) *3 | C0 | 0228 | 0450 | | | | | | | | | ○ | | |
| Reactive power 8 (var) *3 | C0 | 0229 | 0452 | | | | | | | | | ○ | | |
| Temperature 1 (°C or °F) *5 | C0 | 022A | 0454 | H'FFFFFDBC - H'00000848 (-58.0 - 212.0) * 1 digit after the decimal point fixed * Within -50.0 - 100.0 degrees C and -58.0 - 212.0 degrees F | | | ○ | | | | | | | |
| Temperature 2 (°C or °F) *5 | C0 | 022B | 0456 | | | | | | | | | | | |
| Temperature 3 (°C or °F) *5 | C0 | 022C | 0458 | | | | | | | | | | | |
| Temperature 4 (°C or °F) *5 | C0 | 022D | 045A | | | | | | | | | | | |
| Temperature 5 (°C or °F) *5 | C0 | 022E | 045C | | | | | | | | | | | |
| Temperature 6 (°C or °F) *5 | C0 | 022F | 045E | | | | | | | | | | | |
| Temperature 7 (°C or °F) *5 | C0 | 0230 | 0460 | | | | | | | | | | | |
| Temperature 8 (°C or °F) *5 | C0 | 0231 | 0462 | | | | | | | | | | | |
| Earth leakage (Io) 1 (mA) *6 | C0 | 0232 | 0464 | H'00000000-H'000007D0 (0-2000) | | | | ○ | | | | | ○ | |
| Earth leakage (Io) 2 (mA) *6 | C0 | 0233 | 0466 | | | | | | | | | | ○ | |
| Earth leakage (Io) 3 (mA) *6 | C0 | 0234 | 0468 | | | | | | | | | | ○ | |
| Earth leakage (Io) 4 (mA) *6 | C0 | 0235 | 046A | | | | | | | | | | ○ | |
| Earth leakage (Io) 5 (mA) *6 | C0 | 0236 | 046C | | | | | | | | | | ○ | |
| Earth leakage (Io) 6 (mA) *6 | C0 | 0237 | 046E | | | | | | | | | | ○ | |
| Earth leakage (Io) 7 (mA) *6 | C0 | 0238 | 0470 | | | | | | | | | | ○ | |
| Earth leakage (Io) 8 (mA) *6 | C0 | 0239 | 0472 | | | | | | | | | | ○ | |

*1 - *3, *5 - *6 ● Refer to the note at instantaneous value.

## ● Version and status

| Variable name | CompoWay/F | | Modbus | Setting (monitor) value | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Type | Address | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Version | C0 | 0380 | 0700 | E.g. : H' 00000100 > Ver1.00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Status | C0 | 0381 | 0702 | 4. 2. Refer to Status information | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

## ● Alarm history

Alarm history can be read out.
Up to 20 of alarms previously occurred can be read out. The alarms are stored in chronological order, from a small address to a large address.
Therefore, in case of exceeding 20 alarms, the oldest alarm is deleted to be overwritten. To have the alarm history read out, check the history after all addresses are read.
The alarm history is protected against disconnection, so the alarm history occurred before disconnection can be read after disconnection.
87 types of items in the table below can be read as alarm history.

Table: List of alarms

| Alarm occurrence | Alarm kind | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 0 | OFF | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 1 | Active power upper limit alarm 1 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 2 | Active power upper limit alarm 2 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 3 | Active power upper limit alarm 3 | ○ | | | ○ | ○ | | | ○ | | |
| 4 | Active power upper limit alarm 4 | | | | | | | | ○ | | |
| 5 | Active power upper limit alarm 5 | | ○ | | | | | | ○ | | |
| 6 | Active power upper limit alarm 6 | | ○ | | | | | | ○ | | |
| 7 | Active power upper limit alarm 7 | | | | | | | | ○ | | |
| 8 | Active power upper limit alarm 8 | | | | | | | | ○ | | |
| 9 | Active power lower limit alarm 1 | ○ | ○ | | ○ | ○ | | | ○ | | |
| A | Active power lower limit alarm 2 | ○ | ○ | | ○ | ○ | | | ○ | | |
| B | Active power lower limit alarm 3 | ○ | | | ○ | ○ | | | ○ | | |
| C | Active power lower limit alarm 4 | | | | | | | | ○ | | |
| D | Active power lower limit alarm 5 | | ○ | | | | | | ○ | | |
| E | Active power lower limit alarm 6 | | ○ | | | | | | ○ | | |
| F | Active power lower limit alarm 7 | | | | | | | | ○ | | |
| 10 | Active power lower limit alarm 8 | | | | | | | | ○ | | |
| 11 | Over current alarm 1 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| 12 | Over current alarm 2 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| 13 | Over current alarm 3 | ○ | | | ○ | ○ | | ○ | ○ | | |
| 14 | Over current alarm 4 | | | | | | | | ○ | | |
| 15 | Over current alarm 5 | | ○ | | | | | | ○ | | |
| 16 | Over current alarm 6 | | ○ | | | | | | ○ | | |
| 17 | Over current alarm 7 | | | | | | | | ○ | | |
| 18 | Over current alarm 8 | | | | | | | | ○ | | |

| Alarm occurrence | Alarm kind | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 19 | Under current alarm1 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| 1A | Under current alarm2 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| 1B | Under current alarm3 | ○ | | | ○ | ○ | | ○ | ○ | | |
| 1C | Under current alarm4 | | | | | | | | ○ | | |
| 1D | Under current alarm5 | | ○ | | | | | | ○ | | |
| 1E | Under current alarm6 | | ○ | | | | | | ○ | | |
| 1F | Under current alarm7 | | | | | | | | ○ | | |
| 20 | Under current alarm8 | | | | | | | | ○ | | |
| 21 | Over voltage alarm 1 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 22 | Over voltage alarm 2 | | ○ | | | | | | | | |
| 23 | Under voltage alarm 1 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 24 | Under voltage alarm 2 | | ○ | | | | | | | | |
| 25 | Power factor alarm 1 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 26 | Power factor alarm 2 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 27 | Power factor alarm 3 | ○ | | | ○ | ○ | | | ○ | | |
| 28 | Power factor alarm 4 | | | | | | | | ○ | | |
| 29 | Power factor alarm 5 | | ○ | | | | | | ○ | | |
| 2A | Power factor alarm 6 | | ○ | | | | | | ○ | | |
| 2B | Power factor alarm 7 | | | | | | | | ○ | | |
| 2C | Power factor alarm 8 | | | | | | | | ○ | | |
| 2D | Reactive power upper limit alarm 1 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 2E | Reactive power upper limit alarm 2 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 2F | Reactive power upper limit alarm 3 | ○ | | | ○ | ○ | | | ○ | | |
| 30 | Reactive power upper limit alarm 4 | | | | | | | | ○ | | |
| 31 | Reactive power upper limit alarm 5 | | ○ | | | | | | ○ | | |
| 32 | Reactive power upper limit alarm 6 | | ○ | | | | | | ○ | | |
| 33 | Reactive power upper limit alarm 7 | | | | | | | | ○ | | |
| 34 | Reactive power upper limit alarm 8 | | | | | | | | ○ | | |
| 35 | Reactive power lower limit alarm 1 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 36 | Reactive power lower limit alarm 2 | ○ | ○ | | ○ | ○ | | | ○ | | |
| 37 | Reactive power lower limit alarm 3 | ○ | | | ○ | ○ | | | ○ | | |
| 38 | Reactive power lower limit alarm 4 | | | | | | | | ○ | | |
| 39 | Reactive power lower limit alarm 5 | | ○ | | | | | | ○ | | |
| 3A | Reactive power lower limit alarm 6 | | ○ | | | | | | ○ | | |
| 3B | Reactive power lower limit alarm 7 | | | | | | | | ○ | | |
| 3C | Reactive power lower limit alarm 8 | | | | | | | | ○ | | |

| Alarm occurrence | Alarm kind | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 3D | Earth leakage alarm1 | | | | ○ | | | | | ○ | |
| 3E | Earth leakage alarm2 | | | | | | | | | ○ | |
| 3F | Earth leakage alarm3 | | | | | | | | | ○ | |
| 40 | Earth leakage alarm4 | | | | | | | | | ○ | |
| 41 | Earth leakage alarm5 | | | | | | | | | ○ | |
| 42 | Earth leakage alarm6 | | | | | | | | | ○ | |
| 43 | Earth leakage alarm7 | | | | | | | | | ○ | |
| 44 | Earth leakage alarm8 | | | | | | | | | ○ | |
| 45 | Upper-limit temperature alarm 1 | | | ○ | | | | | | | |
| 46 | Upper-limit temperature alarm 2 | | | | | | | | | | |
| 47 | Upper-limit temperature alarm 3 | | | | | | | | | | |
| 48 | Upper-limit temperature alarm 4 | | | | | | | | | | |
| 49 | Upper-limit temperature alarm 5 | | | | | | | | | | |
| 4A | Upper-limit temperature alarm 6 | | | | | | | | | | |
| 4B | Upper-limit temperature alarm 7 | | | | | | | | | | |
| 4C | Upper-limit temperature alarm 8 | | | | | | | | | | |
| 4D | Lower-limit temperature alarm 1 | | | ○ | | | | | | | |
| 4E | Lower-limit temperature alarm 2 | | | | | | | | | | |
| 4F | Lower-limit temperature alarm 3 | | | | | | | | | | |
| 50 | Lower-limit temperature alarm 4 | | | | | | | | | | |
| 51 | Lower-limit temperature alarm 5 | | | | | | | | | | |
| 52 | Lower-limit temperature alarm 6 | | | | | | | | | | |
| 53 | Lower-limit temperature alarm 7 | | | | | | | | | | |
| 54 | Lower-limit temperature alarm 8 | | | | | | | | | | |
| 55 | Phase-loss alarm | | | | ○ | ○ | ○ | ○ | | | |
| 56 | Phase-sequence alarm at electrical system 1 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 57 | Phase-sequence alarm at electrical system 2 | | ○ | | | | | | | | |

Measurement values and address architecture for alarm history are as follows:
Addresses for CompoWay/F and Modbus protocols are also listed.
"○" means that alarm history is stored, and "(Blank)" means that no alarm history is stored so the reading value is always "0."
Reading values through communication are the values in the format indicated in the "Reading value" column. For Alarm occurrence, the values listed in "Table: List of alarms" are read out in 4 bytes.

E.g.: In case of Active power alarm 1 on April 1, 2012, 9:01:00 occurred and lifted on April 1, 2012, 9:10:30:

Alarm occurrence is "H' 00000001"
Occurred date is" H' 00000C04" in Address 1 and "H' 01090100" in Address 2
Release date is "H' 00000C04" in Address 1 and "H' 01090A1E" in Address 2

| Alarm history | Item | Reading value | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Alarm occurrence | Refer to Table: List of alarms | C0 | 0388 | 0710 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 0389 | 0712 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 038A | 0714 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 038B | 0716 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 038C | 0718 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 2 | Alarm occurrence | Refer to Table: List of alarms | C0 | 038D | 071A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 038E | 071C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 038F | 071E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 0390 | 0720 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 0391 | 0722 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 3 | Alarm occurrence | Refer to Table: List of alarms | C0 | 0392 | 0724 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM (Year, month) | C0 | 0393 | 0726 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'0000YYMM*1 | C0 | 0394 | 0728 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'DDhhmmss*2 | C0 | 0395 | 072A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'0000YYMM*1 | C0 | 0396 | 072C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 4 | Alarm occurrence | Refer to Table: List of alarms | C0 | 0397 | 072E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 0398 | 0730 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 0399 | 0732 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 039A | 0734 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 039B | 0736 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 5 | Alarm occurrence | Refer to Table: List of alarms | C0 | 039C | 0738 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 039D | 073A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 039E | 073C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 039F | 073E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03A0 | 0740 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Alarm history | Item | Reading value | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 6 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03A1 | 0742 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03A2 | 0744 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03A3 | 0746 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03A4 | 0748 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03A5 | 074A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 7 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03A6 | 074C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03A7 | 074E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03A8 | 0750 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03A9 | 0752 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03AA | 0754 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 8 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03AB | 0756 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03AC | 0758 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03AD | 075A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03AE | 075C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03AF | 075E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 9 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03B0 | 0760 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03B1 | 0762 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03B2 | 0764 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03B3 | 0766 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03B4 | 0768 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 10 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03B5 | 076A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03B6 | 076C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03B7 | 076E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03B8 | 0770 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03B9 | 0772 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 11 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03BA | 0774 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03BB | 0776 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03BC | 0778 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03BD | 077A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03BE | 077C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 12 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03BF | 077E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03C0 | 0780 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03C1 | 0782 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03C2 | 0784 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03C3 | 0786 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Alarm history | Item | Reading value | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 13 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03C4 | 0788 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03C5 | 078A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03C6 | 078C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03C7 | 078E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03C8 | 0790 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 14 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03C9 | 0792 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03CA | 0794 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03CB | 0796 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03CC | 0798 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03CD | 079A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 15 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03CE | 079C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03CF | 079E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03D0 | 07A0 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03D1 | 07A2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03D2 | 07A4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 16 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03D3 | 07A6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03D4 | 07A8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03D5 | 07AA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03D6 | 07AC | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03D7 | 07AE | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 17 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03D8 | 07B0 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03D9 | 07B2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03DA | 07B4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03DB | 07B6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03DC | 07B8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 18 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03DD | 07BA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03DE | 07BC | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03DF | 07BE | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03E0 | 07C0 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03E1 | 07C2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| 19 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03E2 | 07C4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03E3 | 07C6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03E4 | 07C8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03E5 | 07CA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03E6 | 07CC | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Alarm history | Item | Reading value | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 20 | Alarm occurrence | Refer to Table: List of alarms | C0 | 03E7 | 07CE | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Occurred date | H'0000YYMM*1 | C0 | 03E8 | 07D0 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03E9 | 07D2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Release date | H'0000YYMM*1 | C0 | 03EA | 07D4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | H'DDhhmmss*2 | C0 | 03EB | 07D6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

*1 The format for reading values is as follows: H' 0000YYMM (YY: last 2 digits of the year, MM: month)

*2 The format for reading values is as follows: H' DDhhmmss (DD: day, hh: hour, mm: minute, ss: second)

*3 The relation between electric currents (phase wire method, CT number) and alarm type is as follows:

| Phase wire method | CT input | PMU1A、PGR1C、PVS1C、VAU1B | PMU2A | CTD8E |
|---|---|---|---|---|
| Single phase 2-wire method | 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 |
| | 2 | Over (under) currents alarm 2 | Over (under) currents alarm 2 | Over (under) currents alarm 2 |
| | 3 | Over (under) currents alarm 3 | Over (under) currents alarm 5 | Over (under) currents alarm 3 |
| | 4 | – | Over (under) currents alarm 6 | Over (under) currents alarm 4 |
| | 5 | – | – | Over (under) currents alarm 5 |
| | 6 | – | – | Over (under) currents alarm 6 |
| | 7 | – | – | Over (under) currents alarm 7 |
| | 8 | – | – | Over (under) currents alarm 8 |
| Single phase 3-wire method | 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 |
| | 2 | – | Over (under) currents alarm 2 | Over (under) currents alarm 2 |
| | 3 | Over (under) currents alarm 2 | Over (under) currents alarm 5 | Over (under) currents alarm 3 |
| | 4 | – | Over (under) currents alarm 6 | Over (under) currents alarm 4 |
| | 5 | – | – | Over (under) currents alarm 5 |
| | 6 | – | – | Over (under) currents alarm 6 |
| | 7 | – | – | Over (under) currents alarm 7 |
| | 8 | – | – | Over (under) currents alarm 8 |
| Three phase 3-wire method | 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 | Over (under) currents alarm 1 |
| | 2 | – | Over (under) currents alarm 2 | Over (under) currents alarm 2 |
| | 3 | Over (under) currents alarm 2 | Over (under) currents alarm 5 | Over (under) currents alarm 3 |
| | 4 | – | Over (under) currents alarm 6 | Over (under) currents alarm 4 |
| | 5 | – | – | Over (under) currents alarm 5 |
| | 6 | – | – | Over (under) currents alarm 6 |
| | 7 | – | – | Over (under) currents alarm 7 |
| | 8 | – | – | Over (under) currents alarm 8 |
| Three phase 4-wire method | 1 | Over (under) currents alarm 1 | – | Over (under) currents alarm 1 |
| | 2 | Over (under) currents alarm 2 | – | Over (under) currents alarm 2 |
| | 3 | Over (under) currents alarm 3 | – | Over (under) currents alarm 3 |
| | 4 | – | – | Over (under) currents alarm 4 |
| | 5 | – | – | Over (under) currents alarm 5 |
| | 6 | – | – | Over (under) currents alarm 6 |
| | 7 | – | – | Over (under) currents alarm 7 |
| | 8 | – | – | Over (under) currents alarm 8 |

## ● Measurement history

The history for each measurement items can be read out.
154 items can be stored in measurement history depending on the model.
There are six areas in measurement history, and a different item can be allocated to each of them.
Also, 588 data can be stored in each area, so the period to store the history varies depending on the setting of data storage cycle.
There are two types of data: time data stored in measurement history and values measured at that time.
To have those values read out, refer to the data for a specified period after the time and measurements values are read.

The time and measurement values are stored according to the storage cycle set, however, in case of exceeding the maximum number of data (588), the storage area will be overwritten to be updated, starting from the 1st storage area.
Therefore, in case of exceeding the maximum storage period, the oldest data will be deleted. So, the data must be read out within the maximum storage period.

E.g.: When setting the log storage cycle to 5 minutes, the data for 2 days can be stored at most. After that, the oldest data will be overwritten. If the complete data is required, then the complete data must be read out within 2 days.

Addresses for CompoWay/F and Modbus protocols are also listed.
"○" means that alarm history is stored, and "(Blank)" means that no alarm history is stored so the reading value is always "0."
(Due to the volume of items, some of the addresses are omitted)

The log storage timing is based on 00:00:00.

E.g.: When the power is activated at 00:00:02, the log writing starts at 00:00:05. (When setting the log storage cycle to 5 minutes)

* In case of selecting 24 hours, 0:00 is the storage timing and therefore the data will not be stored unless the power is activated at that time.

The log is stored in EEPROM as described in the table below.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Log area 1-1 | Log area 1-2 | Log area 1-3 | | | | Log area 1-4 | | | |
| Log area 1-5 | Log area 1-6 | Log area 1-7 | | | | Log area 1-8 | | | |
| Log area 1-9 | Log area 1-10 | Log area 1-11 | | | | Log area 1-12 | | | |
| Log area 1-13 | Log area 1-14 | Year | Month | Day | Hour | Min | | | sum |
| Log area 1-15 | Log area 1-16 | Log area 1-17 | | | | Log area 1-18 | | | |
| Log area 1-19 | Log area 1-20 | Log area 1-21 | | | | Log area 1-22 | | | |
| Log area 1-23 | Log area 1-24 | Log area 1-25 | | | | Log area 1-26 | | | |
| Log area 1-27 | Log area 1-28 | Year | Month | Day | Hour | Min | | | sum |
| Log area 1-29 | Log area 1-30 | Log area 1-31 | | | | Log area 1-32 | | | |
| … | … | … | | | | … | | | |
| … | … | … | | | | … | | | |

One block consists of 14 log areas. The log areas are stored starting from Log area 1-1, and the time information is written at the same time when the 1st data in Block 1 is stored. For the reading of log time information, the time information for the beginning area of that block is read out and the time for the storage cycle set is added to the following areas.

E.g.: When Log area 1-1 is 2012.04.02.00:00:00, Log area 1-2 is 2012.04.02.00:00:05.

* In case of disconnection, the area storage area starts from the next block to match the time data and log data after the power is restored. There are 42 blocks for one log storage. It is recommended that the data be collected frequently in the environment where disconnection occurs often.

E.g.: If the disconnection occurs after the data is stored up to Area 1-2, the data storage starts from Area 1-15 after the power is restored. The data between Area 1-2 and 1-15 becomes 0.

## ● Setting of log storage target

| Setting value | Log storage target | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 0 | Integrated effective power amount 1 | ○ | ○ | | ○ | ○ | | | | | |
| 1 | Total active power consumption 2 | ○ | ○ | | ○ | ○ | | | | | |
| 2 | Total active power consumption 3 | ○ | | | ○ | ○ | | | | | |
| 3 | Total active power consumption 4 | | | | | | | | | | |
| 4 | Total active power consumption 5 | | ○ | | | | | | | | |
| 5 | Total active power consumption 6 | | ○ | | | | | | | | |
| 6 | Total active power consumption 7 | | | | | | | | | | |
| 7 | Total active power consumption 8 | | | | | | | | | | |
| 8 | Total regenerated energy 1 | ○ | ○ | | ○ | ○ | | | | | |
| 9 | Total regenerated energy 2 | ○ | ○ | | ○ | ○ | | | | | |
| A | Total regenerated energy 3 | ○ | | | ○ | ○ | | | | | |
| B | Total regenerated energy 4 | | | | | | | | | | |
| C | Total regenerated energy 5 | | ○ | | | | | | | | |
| D | Total regenerated energy 6 | | ○ | | | | | | | | |
| E | Total regenerated energy 7 | | | | | | | | | | |
| F | Total regenerated energy 8 | | | | | | | | | | |
| 10 | Total progression reactive power 1 | ○ | ○ | | ○ | ○ | | | | | |
| 11 | Total progression reactive power 2 | ○ | ○ | | ○ | ○ | | | | | |
| 12 | Total progression reactive power 3 | ○ | | | ○ | ○ | | | | | |
| 13 | Total progression reactive power 4 | | | | | | | | | | |
| 14 | Total progression reactive power 5 | | ○ | | | | | | | | |
| 15 | Total progression reactive power 6 | | ○ | | | | | | | | |
| 16 | Total progression reactive power 7 | | | | | | | | | | |
| 17 | Total progression reactive power 8 | | | | | | | | | | |
| 18 | Total delayed reactive power 1 | ○ | ○ | | ○ | ○ | | | | | |
| 19 | Total delayed reactive power 2 | ○ | ○ | | ○ | ○ | | | | | |
| 1A | Total delayed reactive power 3 | ○ | | | ○ | ○ | | | | | |
| 1B | Total delayed reactive power 4 | | | | | | | | | | |
| 1C | Total delayed reactive power 5 | | ○ | | | | | | | | |
| 1D | Total delayed reactive power 6 | | ○ | | | | | | | | |
| 1E | Total delayed reactive power 7 | | | | | | | | | | |
| 1F | Total delayed reactive power 8 | | | | | | | | | | |

| Setting value | Log storage target | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 20 | Accumulative total reactive power 1 | ○ | ○ | | ○ | ○ | | | | | |
| 21 | Accumulative total reactive power 2 | ○ | ○ | | ○ | ○ | | | | | |
| 22 | Accumulative total reactive power 3 | ○ | | | ○ | ○ | | | | | |
| 23 | Accumulative total reactive power 4 | | | | | | | | | | |
| 24 | Accumulative total reactive power 5 | | ○ | | | | | | | | |
| 25 | Accumulative total reactive power 6 | | ○ | | | | | | | | |
| 26 | Accumulative total reactive power 7 | | | | | | | | | | |
| 27 | Accumulative total reactive power 8 | | | | | | | | | | |
| 28 | Voltage MAX 1 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 29 | Voltage MAX 2 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 2A | Voltage MAX 3 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 2B | Voltage MAX 4 | | ○ | | | | | | | | |
| 2C | Voltage MAX 5 | | ○ | | | | | | | | |
| 2D | Voltage MAX 6 | | ○ | | | | | | | | |
| 2E | Voltage MIN 1 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 2F | Voltage MIN 2 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 30 | Voltage MIN 3 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 31 | Voltage MIN 4 | | ○ | | | | | | | | |
| 32 | Voltage MIN 5 | | ○ | | | | | | | | |
| 33 | Voltage MIN 6 | | ○ | | | | | | | | |
| 34 | Current MAX 1 | ○ | ○ | | ○ | ○ | | ○ | | | |
| 35 | Current MAX 2 | ○ | ○ | | ○ | ○ | | ○ | | | |
| 36 | Current MAX 3 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| 37 | Current MAX 4 | | | | | | | | | | |
| 38 | Current MAX 5 | | | | | | | | | | |
| 39 | Current MAX 6 | | | | | | | | | | |
| 3A | Current MAX 7 | | ○ | | | | | | | | |
| 3B | Current MAX 8 | | ○ | | | | | | | | |
| 3C | Current MAX 9 | | ○ | | | | | | | | |
| 3D | Current MAX 10 | | | | | | | | | | |
| 3E | Current MAX 11 | | | | | | | | | | |
| 3F | Current MAX 12 | | | | | | | | | | |
| 40 | Current MIN 1 | ○ | ○ | | ○ | ○ | | ○ | | | |
| 41 | Current MIN 2 | ○ | ○ | | ○ | ○ | | ○ | | | |
| 42 | Current MIN 3 | ○ | ○ | | ○ | ○ | | ○ | | | |
| 43 | Current MIN 4 | | | | | | | | | | |
| 44 | Current MIN 5 | | | | | | | | | | |
| 45 | Current MIN 6 | | | | | | | | | | |
| 46 | Current MIN 7 | | ○ | | | | | | | | |
| 47 | Current MIN 8 | | ○ | | | | | | | | |
| 48 | Current MIN 9 | | ○ | | | | | | | | |
| 49 | Current MIN 10 | | | | | | | | | | |

| Setting value | Log storage target | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 4A | Current MIN 11 | | | | | | | | | | |
| 4B | Current MIN 12 | | | | | | | | | | |
| 4C | Active power MAX 1 | ○ | ○ | | ○ | ○ | | | | | |
| 4D | Active power MAX 2 | ○ | ○ | | ○ | ○ | | | | | |
| 4E | Active power MAX 3 | ○ | | | ○ | ○ | | | | | |
| 4F | Active power MAX 4 | | | | | | | | | | |
| 50 | Active power MAX 5 | | ○ | | | | | | | | |
| 51 | Active power MAX 6 | | ○ | | | | | | | | |
| 52 | Active power MAX 7 | | | | | | | | | | |
| 53 | Active power MAX 8 | | | | | | | | | | |
| 54 | Active power MIN 1 | ○ | ○ | | ○ | ○ | | | | | |
| 55 | Active power MIN 2 | ○ | ○ | | ○ | ○ | | | | | |
| 56 | Active power MIN 3 | ○ | | | ○ | ○ | | | | | |
| 57 | Active power MIN 4 | | | | | | | | | | |
| 58 | Active power MIN 5 | | ○ | | | | | | | | |
| 59 | Active power MIN 6 | | ○ | | | | | | | | |
| 5A | Active power MIN 7 | | | | | | | | | | |
| 5B | Active power MIN 8 | | | | | | | | | | |
| 5C | Reactive power MIN 1 | ○ | ○ | | ○ | ○ | | | | | |
| 5D | Reactive power MIN 2 | ○ | ○ | | ○ | ○ | | | | | |
| 5E | Reactive power MIN 3 | ○ | | | ○ | ○ | | | | | |
| 5F | Reactive power MIN 4 | | | | | | | | | | |
| 60 | Reactive power MIN 5 | | ○ | | | | | | | | |
| 61 | Reactive power MIN 6 | | ○ | | | | | | | | |
| 62 | Reactive power MIN 7 | | | | | | | | | | |
| 63 | Reactive power MIN 8 | | | | | | | | | | |
| 64 | Reactive power MIN 1 | ○ | ○ | | ○ | ○ | | | | | |
| 65 | Reactive power MIN 2 | ○ | ○ | | ○ | ○ | | | | | |
| 66 | Reactive power MIN 3 | ○ | | | ○ | ○ | | | | | |
| 67 | Reactive power MIN 4 | | | | | | | | | | |
| 68 | Reactive power MIN 5 | | ○ | | | | | | | | |
| 69 | Reactive power MIN 6 | | ○ | | | | | | | | |
| 6A | Reactive power MIN 7 | | | | | | | | | | |
| 6B | Reactive power MIN 8 | | | | | | | | | | |
| 6C | Power factor MAX 1 | ○ | ○ | | ○ | ○ | | | | | |
| 6D | Power factor MAX 2 | ○ | ○ | | ○ | ○ | | | | | |
| 6E | Power factor MAX 3 | ○ | | | ○ | ○ | | | | | |
| 6F | Power factor MAX 4 | | | | | | | | | | |
| 70 | Power factor MAX 5 | | ○ | | | | | | | | |
| 71 | Power factor MAX 6 | | ○ | | | | | | | | |
| 72 | Power factor MAX 7 | | | | | | | | | | |
| 73 | Power factor MAX 8 | | | | | | | | | | |

| Setting value | Log storage target | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 74 | Power factor MIN 1 | ○ | ○ | | ○ | ○ | | | | | |
| 75 | Power factor MIN 2 | ○ | ○ | | ○ | ○ | | | | | |
| 76 | Power factor MIN 3 | ○ | | | ○ | ○ | | | | | |
| 77 | Power factor MIN 4 | | | | | | | | | | |
| 78 | Power factor MIN 5 | | ○ | | | | | | | | |
| 79 | Power factor MIN 6 | | ○ | | | | | | | | |
| 7A | Power factor MIN 7 | | | | | | | | | | |
| 7B | Power factor MIN 8 | | | | | | | | | | |
| 7C | Power original unit 1 | ○ | ○ | | | | | | | | |
| 7D | Power original unit 2 | ○ | ○ | | | | | | | | |
| 7E | Power original unit 3 | ○ | ○ | | | | | | | | |
| 7F | Power original unit 4 | | ○ | | | | | | | | |
| 80 | 3-STATE HIGH total power consumption 1 | ○ | ○ | | | | | | | | |
| 81 | 3-STATE HIGH total power consumption 2 | ○ | ○ | | | | | | | | |
| 82 | 3-STATE HIGH total power consumption 3 | ○ | ○ | | | | | | | | |
| 83 | 3-STATE HIGH total power consumption 4 | | ○ | | | | | | | | |
| 84 | 3-STATE MIDDLE total power consumption 1 | ○ | ○ | | | | | | | | |
| 85 | 3-STATE MIDDLE total power consumption 2 | ○ | ○ | | | | | | | | |
| 86 | 3-STATE MIDDLE total power consumption 3 | ○ | ○ | | | | | | | | |
| 87 | 3-STATE MIDDLE total power consumption 4 | | ○ | | | | | | | | |
| 88 | 3-STATE LOW total power consumption 1 | ○ | ○ | | | | | | | | |
| 89 | 3-STATE LOW total power consumption 2 | ○ | ○ | | | | | | | | |
| 8A | 3-STATE LOW total power consumption 3 | ○ | ○ | | | | | | | | |
| 8B | 3-STATE LOW total power consumption 4 | | ○ | | | | | | | | |
| 8C | 3-STATE HIGH total time 1 | ○ | ○ | | | | | | | | |
| 8D | 3-STATE HIGH total time 2 | ○ | ○ | | | | | | | | |
| 8E | 3-STATE HIGH total time 3 | ○ | ○ | | | | | | | | |
| 8F | 3-STATE HIGH total time 4 | | ○ | | | | | | | | |
| 90 | 3-STATE MIDDLE total time 1 | ○ | ○ | | | | | | | | |
| 91 | 3-STATE MIDDLE total time 2 | ○ | ○ | | | | | | | | |
| 92 | 3-STATE MIDDLE total time 3 | ○ | ○ | | | | | | | | |
| 93 | 3-STATE MIDDLE total time 4 | | ○ | | | | | | | | |
| 94 | 3-STATE LOW total time 1 | ○ | ○ | | | | | | | | |
| 95 | 3-STATE LOW total time 2 | ○ | ○ | | | | | | | | |
| 96 | 3-STATE LOW total time 3 | ○ | ○ | | | | | | | | |
| 97 | 3-STATE LOW total time 4 | | ○ | | | | | | | | |
| 98 | Temperature MAX 1 | | | ○ | | | | | | | |
| 99 | Temperature MAX 2 | | | | | | | | | | |
| 9A | Temperature MAX 3 | | | | | | | | | | |
| 9B | Temperature MAX 4 | | | | | | | | | | |

| Setting value | Log storage target | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 9C | Temperature MAX 5 | | | | | | | | | | |
| 9D | Temperature MAX 6 | | | | | | | | | | |
| 9E | Temperature MAX 7 | | | | | | | | | | |
| 9F | Temperature MAX 8 | | | | | | | | | | |
| A0 | Temperature MIN 1 | | | ○ | | | | | | | |
| A1 | Temperature MIN 2 | | | | | | | | | | |
| A2 | Temperature MIN 3 | | | | | | | | | | |
| A3 | Temperature MIN 4 | | | | | | | | | | |
| A4 | Temperature MIN 5 | | | | | | | | | | |
| A5 | Temperature MIN 6 | | | | | | | | | | |
| A6 | Temperature MIN 7 | | | | | | | | | | |
| A7 | Temperature MIN 8 | | | | | | | | | | |
| A8 | Io MAX 1 | | | | ○ | | | | | | |
| A9 | Io MAX 2 | | | | | | | | | | |
| AA | Io MAX 3 | | | | | | | | | | |
| AB | Io MAX 4 | | | | | | | | | | |
| AC | Io MAX 5 | | | | | | | | | | |
| AD | Io MAX 6 | | | | | | | | | | |
| AE | Io MAX 7 | | | | | | | | | | |
| AF | Io MAX 8 | | | | | | | | | | |
| B0 | Io MIN 1 | | | | ○ | | | | | | |
| B1 | Io MIN 2 | | | | | | | | | | |
| B2 | Io MIN 3 | | | | | | | | | | |
| B3 | Io MIN 4 | | | | | | | | | | |
| B4 | Io MIN 5 | | | | | | | | | | |
| B5 | Io MIN 6 | | | | | | | | | | |
| B6 | Io MIN 7 | | | | | | | | | | |
| B7 | Io MIN 8 | | | | | | | | | | |
| B8 | ON time of pulse enter 1 | | | ○ | | | | | | | |
| B9 | ON time of pulse enter 2 | | | ○ | | | | | | | |
| BA | ON time of pulse enter 3 | | | ○ | | | | | | | |
| BB | ON time of pulse enter 4 | | | ○ | | | | | | | |
| BC | ON time of pulse enter 5 | | | ○ | | | | | | | |
| BD | ON time of pulse enter 6 | | | ○ | | | | | | | |
| BE | ON time of pulse enter 7 | | | ○ | | | | | | | |
| BF | Pulse entering count 1 | | | ○ | | | | | | | |
| C0 | Pulse entering count 2 | | | ○ | | | | | | | |
| C1 | Pulse entering count 3 | | | ○ | | | | | | | |
| C2 | Pulse entering count 4 | | | ○ | | | | | | | |
| C3 | Pulse entering count 5 | | | ○ | | | | | | | |
| C4 | Pulse entering count 6 | | | ○ | | | | | | | |
| C5 | Pulse entering count 7 | | | ○ | | | | | | | |

## Log 1 area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 0800 | 1000 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0801 | 1002 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 0802 | 1004 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0803 | 1006 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 0804 | 1008 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0805 | 100A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 0806 | 100C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0807 | 100E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 0C90 | 1920 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0C91 | 1922 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 0C92 | 1924 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0C93 | 1926 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 0C94 | 1928 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0C95 | 192A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 0C96 | 192C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0C97 | 192E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## Log 2 area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 0D00 | 1A00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0D01 | 1A02 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 0D02 | 1A04 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0D03 | 1A06 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 0D04 | 1A08 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0D05 | 1A0A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 0D06 | 1A0C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 0D07 | 1A0E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 1190 | 2320 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1191 | 2322 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 1192 | 2324 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1193 | 2326 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 1194 | 2328 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1195 | 232A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 1196 | 232C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1197 | 232E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## Log 3 Area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 1200 | 2400 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1201 | 2402 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 1202 | 2404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1203 | 2406 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 1204 | 2408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1205 | 240A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 1206 | 240C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1207 | 240E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 1690 | 2D20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1691 | 2D22 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 1692 | 2D24 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1693 | 2D26 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 1694 | 2D28 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1695 | 2D2A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 1696 | 2D2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1697 | 2D2E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## Log 4 area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 1700 | 2E00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1701 | 2E02 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 1702 | 2E04 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1703 | 2E06 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 1704 | 2E08 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1705 | 2E0A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 1706 | 2E0C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1707 | 2E0E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 1B90 | 3720 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1B91 | 3722 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 1B92 | 3724 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1B93 | 3726 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 1B94 | 3728 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1B95 | 372A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 1B96 | 372C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1B97 | 372E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## Log 5 area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 1C00 | 3800 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1C01 | 3802 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 1C02 | 3804 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1C03 | 3806 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 1C04 | 3808 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1C05 | 380A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 1C06 | 380C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 1C07 | 380E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 2090 | 4120 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2091 | 4122 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 2092 | 4124 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2093 | 4126 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 2094 | 4128 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2095 | 412A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 2096 | 412C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2097 | 412E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## Log 6 area

| Item | Reading item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 1 | Time | C0 | 2100 | 4200 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2101 | 4202 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 2 | Time | C0 | 2102 | 4204 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2103 | 4206 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 3 | Time | C0 | 2104 | 4208 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2105 | 420A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 4 | Time | C0 | 2106 | 420C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2107 | 420E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| … | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| 585 | Time | C0 | 2590 | 4B20 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2591 | 4B22 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 586 | Time | C0 | 2592 | 4B24 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2593 | 4B26 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 587 | Time | C0 | 2594 | 4B28 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2595 | 4B2A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| 588 | Time | C0 | 2596 | 4B2C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| | Measurement value | | 2597 | 4B2E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

## ● Instantaneous voltage drop history

Each data when instantaneous voltage drop occurs can be read out.
The following 6 data is stored as history:

- Instantaneous voltage drop occurred time　Instantaneous voltage drop occurred date (Year, month, date, hour, minute, second)
- Instantaneous voltage drop duration time　Instantaneous voltage drop duration time (ms)
- Effective value before instantaneous voltage drop　Effective value (V) of 10 waves before instantaneous voltage drop (V)　120 pieces
- Effective value before instantaneous voltage drop　Effective value (V) of 1 wave before instantaneous voltage drop (V)　64 pieces
- Effective value after instantaneous voltage drop　Effective value (V) of 1 wave after instantaneous voltage drop (V)　64 pieces
- AD value before and after instantaneous voltage drop　AD value of 5 waves before and after instantaneous voltage drop (value of 2.5 waves before and after instantaneous voltage drop, respectively) (V)

However, for the AD value before and after instantaneous voltage drop, only the value occurred first will be retained. This value can be read out through an operation command.
For the instantaneous voltage drop detection, four settings are possible.
Data for the latest 8 detections is stored for those four settings and up to 32 data can be read out.
The data is stored in areas, from Area 1 to Area 8. For the data for instantaneous voltage drop occurred more than 8 times, the oldest data will be overwritten to be updated.
Therefore, in case of exceeding the maximum storage area (occurrence frequency), the oldest data will be deleted. So, the data must be read out within the maximum storage period.

Addresses for CompoWay/F and Modbus protocols are also listed.
Two of the models are equipped with the instantaneous voltage drop function, so only those models are described. For other models, the value of "0" is always returned at the time of reading.
(Due to the volume of items, some of the addresses are omitted)

## Instantaneous voltage drop 1_area 1

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop1_1 | Instantaneous voltage drop time | Time | C0 | 2800 | 5000 | | | | | ○ | ○ | | | | |
| | | | | 2801 | 5002 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 2802 | 5004 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2803 | 5006 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 2804 | 5008 | | | | | ○ | ○ | | | | |
| | | Effective value 3 | C0 | 2805 | 500A | | | | | ○ | ○ | | | | |
| | | Effective value 4 | C0 | 2806 | 500C | | | | | ○ | ○ | | | | |
| | | Effective value 5 | C0 | 2807 | 500E | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 116 | C0 | 2876 | 50EC | | | | | ○ | ○ | | | | |
| | | Effective value 117 | C0 | 2877 | 50EE | | | | | ○ | ○ | | | | |
| | | Effective value 118 | C0 | 2878 | 50F0 | | | | | ○ | ○ | | | | |
| | | Effective value 119 | C0 | 2879 | 50F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 287A | 50F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 287B | 50F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 287C | 50F8 | | | | | ○ | ○ | | | | |
| | | Effective value 3 | C0 | 287D | 50FA | | | | | ○ | ○ | | | | |
| | | Effective value 4 | C0 | 287E | 50FC | | | | | ○ | ○ | | | | |
| | | Effective value 5 | C0 | 287F | 50FE | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 60 | C0 | 28B6 | 516C | | | | | ○ | ○ | | | | |
| | | Effective value 61 | C0 | 28B7 | 516E | | | | | ○ | ○ | | | | |
| | | Effective value 62 | C0 | 28B8 | 5170 | | | | | ○ | ○ | | | | |
| | | Effective value 63 | C0 | 28B9 | 5172 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 28BA | 5174 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 28BB | 5176 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 28BC | 5178 | | | | | ○ | ○ | | | | |
| | | Effective value 3 | C0 | 28BD | 517A | | | | | ○ | ○ | | | | |
| | | Effective value 4 | C0 | 28BE | 517C | | | | | ○ | ○ | | | | |
| | | Effective value 5 | C0 | 28BF | 517E | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 60 | C0 | 28F6 | 51EC | | | | | ○ | ○ | | | | |
| | | Effective value 61 | C0 | 28F7 | 51EE | | | | | ○ | ○ | | | | |
| | | Effective value 62 | C0 | 28F8 | 51F0 | | | | | ○ | ○ | | | | |
| | | Effective value 63 | C0 | 28F9 | 51F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 28FA | 51F4 | | | | | ○ | ○ | | | | |

After this, for instantaneous voltage drop 1 - 4 and Area 1 - 8, abbreviated addresses are listed.

## Instantaneous voltage drop 1_area 2

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_2 | Instantaneous voltage drop time | Time | C0 | 2900 | 5200 | | | | | O | O | | | | |
| | | | | 2901 | 5202 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2902 | 5204 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2903 | 5206 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2904 | 5208 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2979 | 52F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 297A | 52F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 297B | 52F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 297C | 52F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 29B9 | 5372 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 29BA | 5374 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 | Effective value 1 | C0 | 29BB | 5376 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 29BC | 5378 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 29F9 | 53F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 29FA | 53F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 3

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_3 | Instantaneous voltage drop time | Time | C0 | 2A00 | 5400 | | | | | O | O | | | | |
| | | | | 2A01 | 5402 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2A02 | 5404 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2A03 | 5406 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2A04 | 5408 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2A79 | 54F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 2A7A | 54F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2A7B | 54F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2A7C | 54F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2AB9 | 5572 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2ABA | 5574 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2ABB | 5576 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2ABC | 5578 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2AF9 | 55F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2AFA | 55F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 4

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_4 | Instantaneous voltage drop time | Time | C0 | 2B00 | 5600 | | | | | O | O | | | | |
| | | | | 2B01 | 5602 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2B02 | 5604 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2B03 | 5606 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2B04 | 5608 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2B79 | 56F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 2B7A | 56F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2B7B | 56F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2B7C | 56F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2BB9 | 5772 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2BBA | 5774 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2BBB | 5776 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2BBC | 5778 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2BF9 | 57F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2BFA | 57F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 5

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_5 | Instantaneous voltage drop time | Time | C0 | 2C00 | 5800 | | | | | O | O | | | | |
| | | | | 2C01 | 5802 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2C02 | 5804 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2C03 | 5806 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2C04 | 5808 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2C79 | 58F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 2C7A | 58F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2C7B | 58F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2C7C | 58F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2CB9 | 5972 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2CBA | 5974 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2CBB | 5976 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2CBC | 5978 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2CF9 | 59F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2CFA | 59F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 6

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_6 | Instantaneous voltage drop time | Time | C0 | 2D00 | 5A00 | | | | | O | O | | | | |
| | | | | 2D01 | 5A02 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2D02 | 5A04 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2D03 | 5A06 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2D04 | 5A08 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2D79 | 5AF2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 2D7A | 5AF4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2D7B | 5AF6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2D7C | 5AF8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2DB9 | 5B72 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2DBA | 5B74 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2DBB | 5B76 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2DBC | 5B78 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2DF9 | 5BF2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2DFA | 5BF4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 7

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_7 | Instantaneous voltage drop time | Time | C0 | 2E00 | 5C00 | | | | | O | O | | | | |
| | | | | 2E01 | 5C02 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 2E02 | 5C04 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2E03 | 5C06 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2E04 | 5C08 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2E79 | 5CF2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 2E7A | 5CF4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2E7B | 5CF6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2E7C | 5CF8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2EB9 | 5D72 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2EBA | 5D74 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2EBB | 5D76 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 2EBC | 5D78 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2EF9 | 5DF2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 2EFA | 5DF4 | | | | | O | O | | | | |

## Instantaneous voltage drop 1_area 8

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 1_8 | Instantaneous voltage drop time | Time | C0 | 2F00 | 5E00 | | | | | ○ | ○ | | | | |
| | | | | 2F01 | 5E02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 2F02 | 5E04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 2F03 | 5E06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 2F04 | 5E08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 2F79 | 5EF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 2F7A | 5EF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2F7B | 5EF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 2F7C | 5EF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2FB9 | 5F72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 2FBA | 5F74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 2FBB | 5F76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 2FBC | 5F78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 2FF9 | 5FF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 2FFA | 5FF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 2_area 1

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_1 | Instantaneous voltage drop time | Time | C0 | 3000 | 6000 | | | | | O | O | | | | |
| | | | | 3001 | 6002 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 3002 | 6004 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3003 | 6006 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 3004 | 6008 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3079 | 60F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 307A | 60F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 307B | 60F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 307C | 60F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 30B9 | 6172 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 30BA | 6174 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 30BB | 6176 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 30BC | 6178 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 30F9 | 61F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 30FA | 61F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 2_area 2

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_2 | Instantaneous voltage drop time | Time | C0 | 3100 | 6200 | | | | | O | O | | | | |
| | | | | 3101 | 6202 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 3102 | 6204 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3103 | 6206 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 3104 | 6208 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3179 | 62F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 317A | 62F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 317B | 62F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 317C | 62F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 31B9 | 6372 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 31BA | 6374 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 31BB | 6376 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 31BC | 6378 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 31F9 | 63F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 31FA | 63F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 2_area 3

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_3 | Instantaneous voltage drop time | Time | C0 | 3200 | 6400 | | | | | ○ | ○ | | | | |
| | | | | 3201 | 6402 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3202 | 6404 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3203 | 6406 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3204 | 6408 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3279 | 64F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 327A | 64F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 327B | 64F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 327C | 64F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 32B9 | 6572 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 32BA | 6574 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 32BB | 6576 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 32BC | 6578 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 32F9 | 65F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 32FA | 65F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 2_area 4

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_4 | Instantaneous voltage drop time | Time | C0 | 3300 | 6600 | | | | | ○ | ○ | | | | |
| | | | | 3301 | 6602 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3302 | 6604 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3303 | 6606 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3304 | 6608 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3379 | 66F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 337A | 66F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 337B | 66F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 337C | 66F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 33B9 | 6772 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 33BA | 6774 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 33BB | 6776 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 33BC | 6778 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 33F9 | 67F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 33FA | 67F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 2_area 5

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_5 | Instantaneous voltage drop time | Time | C0 | 3400 | 6800 | | | | | O | O | | | | |
| | | | | 3401 | 6802 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 3402 | 6804 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3403 | 6806 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 3404 | 6808 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3479 | 68F2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 347A | 68F4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 347B | 68F6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 347C | 68F8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 34B9 | 6972 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 34BA | 6974 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 34BB | 6976 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 34BC | 6978 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 34F9 | 69F2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 34FA | 69F4 | | | | | O | O | | | | |

## Instantaneous voltage drop 2_area 6

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_6 | Instantaneous voltage drop time | Time | C0 | 3500 | 6A00 | | | | | O | O | | | | |
| | | | | 3501 | 6A02 | | | | | O | O | | | | |
| | Continuation time | Time | C0 | 3502 | 6A04 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3503 | 6A06 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 3504 | 6A08 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3579 | 6AF2 | | | | | O | O | | | | |
| | | Effective value 120 | C0 | 357A | 6AF4 | | | | | O | O | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 357B | 6AF6 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 357C | 6AF8 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 35B9 | 6B72 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 35BA | 6B74 | | | | | O | O | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 35BB | 6B76 | | | | | O | O | | | | |
| | | Effective value 2 | C0 | 35BC | 6B78 | | | | | O | O | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 35F9 | 6BF2 | | | | | O | O | | | | |
| | | Effective value 64 | C0 | 35FA | 6BF4 | | | | | O | O | | | | |

## Instantaneous voltage drop 2_area 7

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_7 | Instantaneous voltage drop time | Time | C0 | 3600 | 6C00 | | | | | ○ | ○ | | | | |
| | | | | 3601 | 6C02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3602 | 6C04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3603 | 6C06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3604 | 6C08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3679 | 6CF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 367A | 6CF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 367B | 6CF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 367C | 6CF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 36B9 | 6D72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 36BA | 6D74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 36BB | 6D76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 36BC | 6D78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 36F9 | 6DF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 36FA | 6DF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 2_area 8

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 2_8 | Instantaneous voltage drop time | Time | C0 | 3700 | 6E00 | | | | | ○ | ○ | | | | |
| | | | | 3701 | 6E02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3702 | 6E04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3703 | 6E06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3704 | 6E08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3779 | 6EF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 377A | 6EF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 377B | 6EF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 377C | 6EF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 37B9 | 6F72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 37BA | 6F74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 37BB | 6F76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 37BC | 6F78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 37F9 | 6FF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 37FA | 6FF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 1

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_1 | Instantaneous voltage drop time | Time | C0 | 3800 | 7000 | | | | | ○ | ○ | | | | |
| | | | | 3801 | 7002 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3802 | 7004 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3803 | 7006 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3804 | 7008 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3879 | 70F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 387A | 70F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 387B | 70F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 387C | 70F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 38B9 | 7172 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 38BA | 7174 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 38BB | 7176 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 38BC | 7178 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 38F9 | 71F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 38FA | 71F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 2

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_2 | Instantaneous voltage drop time | Time | C0 | 3900 | 7200 | | | | | ○ | ○ | | | | |
| | | | | 3901 | 7202 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3902 | 7204 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3903 | 7206 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3904 | 7208 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3979 | 72F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 397A | 72F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 397B | 72F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 397C | 72F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 39B9 | 7372 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 39BA | 7374 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 39BB | 7376 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 39BC | 7378 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 39F9 | 73F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 39FA | 73F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 3

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_3 | Instantaneous voltage drop time | Time | C0 | 3A00 | 7400 | | | | | ○ | ○ | | | | |
| | | | | 3A01 | 7402 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3A02 | 7404 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3A03 | 7406 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3A04 | 7408 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3A79 | 74F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3A7A | 74F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3A7B | 74F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3A7C | 74F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3AB9 | 7572 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3ABA | 7574 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3ABB | 7576 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3ABC | 7578 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3AF9 | 75F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3AFA | 75F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 4

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_4 | Instantaneous voltage drop time | Time | C0 | 3B00 | 7600 | | | | | ○ | ○ | | | | |
| | | | | 3B01 | 7602 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3B02 | 7604 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3B03 | 7606 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3B04 | 7608 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3B79 | 76F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3B7A | 76F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3B7B | 76F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3B7C | 76F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3BB9 | 7772 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3BBA | 7774 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3BBB | 7776 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3BBC | 7778 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3BF9 | 77F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3BFA | 77F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 5

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_5 | Instantaneous voltage drop time | Time | C0 | 3C00 | 7800 | | | | | ○ | ○ | | | | |
| | | | | 3C01 | 7802 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3C02 | 7804 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3C03 | 7806 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3C04 | 7808 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3C79 | 78F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3C7A | 78F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3C7B | 78F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3C7C | 78F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3CB9 | 7972 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3CBA | 7974 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3CBB | 7976 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3CBC | 7978 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3CF9 | 79F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3CFA | 79F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 6

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_6 | Instantaneous voltage drop time | Time | C0 | 3D00 | 7A00 | | | | | ○ | ○ | | | | |
| | | | | 3D01 | 7A02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3D02 | 7A04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3D03 | 7A06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3D04 | 7A08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3D79 | 7AF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3D7A | 7AF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3D7B | 7AF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3D7C | 7AF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3DB9 | 7B72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3DBA | 7B74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3DBB | 7B76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3DBC | 7B78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3DF9 | 7BF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3DFA | 7BF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 7

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_7 | Instantaneous voltage drop time | Time | C0 | 3E00 | 7C00 | | | | | ○ | ○ | | | | |
| | | | | 3E01 | 7C02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3E02 | 7C04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3E03 | 7C06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3E04 | 7C08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3E79 | 7CF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3E7A | 7CF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3E7B | 7CF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3E7C | 7CF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3EB9 | 7D72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3EBA | 7D74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3EBB | 7D76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3EBC | 7D78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3EF9 | 7DF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3EFA | 7DF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 3_area 8

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 3_8 | Instantaneous voltage drop time | Time | C0 | 3F00 | 7E00 | | | | | ○ | ○ | | | | |
| | | | | 3F01 | 7E02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 3F02 | 7E04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 3F03 | 7E06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3F04 | 7E08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 3F79 | 7EF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 3F7A | 7EF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3F7B | 7EF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3F7C | 7EF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3FB9 | 7F72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3FBA | 7F74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 3FBB | 7F76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 3FBC | 7F78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 3FF9 | 7FF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 3FFA | 7FF4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 1

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_1 | Instantaneous voltage drop time | Time | C0 | 4000 | 8000 | | | | | ○ | ○ | | | | |
| | | | | 4001 | 8002 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4002 | 8004 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4003 | 8006 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4004 | 8008 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4079 | 80F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 407A | 80F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 407B | 80F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 407C | 80F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 40B9 | 8172 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 40BA | 8174 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 40BB | 8176 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 40BC | 8178 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 40F9 | 81F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 40FA | 81F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 2

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_2 | Instantaneous voltage drop time | Time | C0 | 4100 | 8200 | | | | | ○ | ○ | | | | |
| | | | | 4101 | 8202 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4102 | 8204 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4103 | 8206 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4104 | 8208 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4179 | 82F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 417A | 82F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 417B | 82F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 417C | 82F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 41B9 | 8372 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 41BA | 8374 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 41BB | 8376 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 41BC | 8378 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 41F9 | 83F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 41FA | 83F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 3

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_3 | Instantaneous voltage drop time | Time | C0 | 4200 | 8400 | | | | | ○ | ○ | | | | |
| | | | | 4201 | 8402 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4202 | 8404 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4203 | 8406 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4204 | 8408 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4279 | 84F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 427A | 84F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 427B | 84F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 427C | 84F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 42B9 | 8572 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 42BA | 8574 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 42BB | 8576 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 42BC | 8578 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 42F9 | 85F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 42FA | 85F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 4

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_4 | Instantaneous voltage drop time | Time | C0 | 4300 | 8600 | | | | | ○ | ○ | | | | |
| | | | | 4301 | 8602 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4302 | 8604 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4303 | 8606 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4304 | 8608 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4379 | 86F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 437A | 86F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 437B | 86F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 437C | 86F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 43B9 | 8772 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 43BA | 8774 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 43BB | 8776 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 43BC | 8778 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 43F9 | 87F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 43FA | 87F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 5

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_5 | Instantaneous voltage drop time | Time | C0 | 4400 | 8800 | | | | | ○ | ○ | | | | |
| | | | | 4401 | 8802 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4402 | 8804 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4403 | 8806 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4404 | 8808 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4479 | 88F2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 447A | 88F4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 447B | 88F6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 447C | 88F8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 44B9 | 8972 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 44BA | 8974 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 44BB | 8976 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 44BC | 8978 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 44F9 | 89F2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 44FA | 89F4 | | | | | ○ | ○ | | | | |

## Instantaneous voltage drop 4_area 6

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_6 | Instantaneous voltage drop time | Time | C0 | 4500 | 8A00 | | | | | ○ | ○ | | | | |
| | | | | 4501 | 8A02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4502 | 8A04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4503 | 8A06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4504 | 8A08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4579 | 8AF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 457A | 8AF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 457B | 8AF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 457C | 8AF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 45B9 | 8B72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 45BA | 8B74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 45BB | 8B76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 45BC | 8B78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 45F9 | 8BF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 45FA | 8BF4 | | | | | ○ | ○ | | | | |

### Instantaneous voltage drop 4_area 7

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_7 | Instantaneous voltage drop time | Time | C0 | 4600 | 8C00 | | | | | ○ | ○ | | | | |
| | | | | 4601 | 8C02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4602 | 8C04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4603 | 8C06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4604 | 8C08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4679 | 8CF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 467A | 8CF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 467B | 8CF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 467C | 8CF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 46B9 | 8D72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 46BA | 8D74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 46BB | 8D76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 46BC | 8D78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 46F9 | 8DF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 46FA | 8DF4 | | | | | ○ | ○ | | | | |

### Instantaneous voltage drop 4_area 8

| Item | Reading value | Reading Item | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Type | Address | Address | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop 4_8 | Instantaneous voltage drop time | Time | C0 | 4700 | 8E00 | | | | | ○ | ○ | | | | |
| | | | | 4701 | 8E02 | | | | | ○ | ○ | | | | |
| | Continuation time | Time | C0 | 4702 | 8E04 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 120 pcs | Effective value 1 | C0 | 4703 | 8E06 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 4704 | 8E08 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 119 | C0 | 4779 | 8EF2 | | | | | ○ | ○ | | | | |
| | | Effective value 120 | C0 | 477A | 8EF4 | | | | | ○ | ○ | | | | |
| | Before instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 477B | 8EF6 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 477C | 8EF8 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 47B9 | 8F72 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 47BA | 8F74 | | | | | ○ | ○ | | | | |
| | After instantaneous voltage drop 64 pcs | Effective value 1 | C0 | 47BB | 8F76 | | | | | ○ | ○ | | | | |
| | | Effective value 2 | C0 | 47BC | 8F78 | | | | | ○ | ○ | | | | |
| | | … | … | … | … | … | … | … | … | … | … | … | … | … | … |
| | | Effective value 63 | C0 | 47F9 | 8FF2 | | | | | ○ | ○ | | | | |
| | | Effective value 64 | C0 | 47FA | 8FF4 | | | | | ○ | ○ | | | | |

# 4.2 Status information

The reading value in 4 bytes along with the bit information below is returned.

bit

| 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 = not occurred/1 = occurred (for bit 5, 0 = in operation/1 = not in operation) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Each bit information is defined according to model as follows:

| Bit | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| 0 | RAM error | | | | | | | | | |
| 1 | EEPROM error | | | | | | | | | |
| 2 | EEPROM error | | | | | | | | | |
| 3 | RTC error | | | | | | | — | — | — |
| 4 | Communication error | | | | | | | | | DevicwNet communication error |
| 5 | Operation mode | | | | | | | | | |
| 6 | Over input voltage | | — | Over input voltage | | | | — | — | — |
| 7 | Over input currents | | — | Over input currents | | — | Over input currents | | | — |
| 8 | Insufficient input voltage | | — | Insufficient input voltage | | | | — | — | — |
| 9 | Input frequency error | | — | Input frequency error | | | | — | — | — |
| 10 | CT input 1 | | Event input 1 | CT input 1 | | — | CT input 1 | | ZCT input 1 | — |
| 11 | CT input 2 | | Event input 2 | CT input 2 | | — | CT input 2 | | ZCT input 2 | — |
| 12 | CT input 3 | | Event input 3 | CT input 3 | | — | CT input 3 | | ZCT input 3 | — |
| 13 | — | CT input 4 | Event input 4 | ZCT input | — | — | — | CT input 4 | ZCT input 4 | — |
| 14 | — | — | Event input 5 | — | — | — | — | CT input 5 | ZCT input 5 | — |
| 15 | — | — | Event input 6 | — | — | — | — | CT input 6 | ZCT input 6 | — |
| 16 | — | — | Event input 7 | — | — | — | — | CT input 7 | ZCT input 7 | — |
| 17 | — | — | Thermistor input | — | — | — | — | CT input 8 | ZCT input 8 | — |
| 18 | OUT1 | | | | | | | | | — |
| 19 | OUT2 | | | | | | | — | — | — |
| 20 | OUT3 | | | — | — | — | — | — | — | — |
| 21 | 3-STATE LOW condition (Electrical system 1) | | — | — | — | — | — | — | — | — |
| 22 | 3-STATE MIDDLE condition (Electrical system 1) | | — | — | — | — | — | — | — | — |
| 23 | 3-STATE MIDDLE condition (Electrical system 1) | | — | — | — | — | — | — | — | — |
| 24 | — | 3-STATE LOW condition (Electrical system 2) | — | — | — | — | — | — | — | — |
| 25 | — | 3-STATE MIDDLE condition (Electrical system 2) | — | — | — | — | — | — | — | — |
| 26 | — | 3-STATE MIDDLE condition (Electrical system 2) | — | — | — | — | — | — | — | — |
| 27 | — | — | — | — | — | — | — | — | — | — |
| 28 | Alarm 1 | | | | | | | | | — |
| 29 | — | Alarm 2 | — | — | — | — | — | Alarm 2 | — | — |
| 30 | — | — | — | — | — | — | — | — | — | — |
| 31 | — | — | — | — | — | — | — | — | — | — |

* "-" refers to a bit undefined. The reading value is always "0."

- RAM error/EEPROM error (0: No; 1: Yes)
  Yes or No of the occurrence of memory error is indicated.
- RTC error (0: No; 1: Yes)
  When the time is not set, the indication is 1: Yes.
- Communication error/DeviceNet communication error (0: No; 1: Yes)
  Yes or No of the occurrence of internal communication and DeviceNet communication error is indicated.
- Operation mode (0: in operation; 1: not in operation)
  In operation mode, the indication is 1: not in operation, and in measurement mode, the indication is 0: in operation.
- Over input voltage/over input currents/insufficient input voltage/frequency error (0: No; 1: Yes)
  The condition of each input is indicated.
- CT input/ZCT input/event input/thermistor input (0: No; 1: Yes)
  In case the signal of each input detected, the indication is 1: Yes.
- OUT 1/OUT 2 (0: No; 1: Yes)
  The condition of Output terminal 1 and 2 is indicated.
- 3-STATE LOW／MIDDLE／HIGH (Electrical system 1/Electrical system 2) (0: No; 1: Yes)
  The sorting condition of 3-SATET is indicated.
- Alarm 1/Alarm 2 (0: No; 1: Yes)
  Yes or No of the occurrence of alarm is indicated.

# 4.3 List of parameter areas

## List of parameter areas

Addresses for CompoWay/F and Modbus protocols are also listed.

The item that can be set is "○," and the item that cannot be set is left "(blank)" for each model.

The operation for the items of the model that cannot be set at the time of reading is described below.

Writing: A normal response is returned for the model that cannot be set, but the setting values are not changed.

Reading: The value from the model that cannot be set is always "0."

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Electrical system 1 applicable phase wire | 2: Three phase 3-wire method | H'00000000: Single phase 2-wire method<br>H'00000001: Single phase 3-wire method<br>H'00000002: Three phase 3-wire method<br>H'00000003: Three phase 4-wire method | C000 | 0480 | 0900 | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | | |
| Electrical system 2 applicable phase wire | 2: Three phase 3-wire method | H'00000000: Single phase 2-wire method<br>H'00000001: Single phase 3-wire method<br>H'00000002: Three phase 3-wire method | C000 | 0481 | 0902 | | ○ | | | | | | ○ | | |
| Measurement Block 1 synchronizing selection | 0: Electrical system 1 | H'00000000: Electrical system 1<br>H'00000001: Electrical system 2 | C000 | 0482 | 0904 | | | | | | | | ○ | | |
| Measurement Block 2 synchronizing selection | | | C000 | 0483 | 0906 | | | | | | | | ○ | | |
| Measurement Block 1 dedicated CT type | 2:100 A | H'00000000:5 A<br>H'00000001:50 A<br>H'00000002:100 A<br>H'00000003:200 A<br>H'00000004:400 A<br>H'00000005:600 A | C000 | 0484 | 0908 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 2 dedicated CT type | | | C000 | 0485 | 090A | | ○ | | | | | | ○ | | |
| Electrical system 1 VT ratio | 1.00 | H'00000001- H'0000270F<br>(0.01 - 99.99)<br>* 2 digits after the decimal point fixed | C000 | 0486 | 090C | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | | |
| Electrical system 2 VT ratio | | | C000 | 0487 | 090E | | ○ | | | | | | ○ | | |
| Measurement block 1CT ratio | 1 | H'00000001-H'000003E8<br>(1-1000) | C000 | 0488 | 0910 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement block 2 CT ratio | | | C000 | 0489 | 0912 | | ○ | | | | | | ○ | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 1 Low-cut current | 0.6% | H'00000001 - H'000000C7 (0.1- 19.9%) * 1 digit after the decimal point fixed | C000 | 048A | 0914 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 2 Low-cut current | | | C000 | 048B | 0916 | | ○ | | | | | | ○ | | |
| Earth leakage Low-cut current | 1.0mA | H'00000001- H'0000012C (0.1- 30.0mA) * 1 digit after the decimal point fixed | C000 | 048C | 0918 | | | | ○ | | | | | ○ | |
| Simple measurement | 0:OFF | H'00000000: OFF (Regular measurement), H'00000001: ON (Simple measurement) | C000 | 048D | 091A | ○ | ○ | | | | | | ○ | | |
| Electrical system 1 Voltage on simple measurement | 110.0V | H'00000001- H'0001869F (0.1- 9999.9V) * 1 digit after the decimal point fixed | C000 | 048E | 091C | ○ | ○ | | | | | | ○ | | |
| Electrical system 2 Voltage on simple measurement | | | C000 | 048F | 091E | | ○ | | | | | | ○ | | |
| Measurement Block 1 Power factor on simple measurement | 1.00 | H'00000001- H'00000064 (0.01 - 1.00) * 1 digit after the decimal point fixed | C000 | 0490 | 0920 | ○ | ○ | | | | | | ○ | | |
| Measurement Block 2 Power factor on simple measurement | | | C000 | 0491 | 0922 | | ○ | | | | | | ○ | | |
| Average count | 0:OFF | H'00000000: OFF<br>H'00000001: 2 times<br>H'00000002: 4 times<br>H'00000003: 8 times<br>H'00000004: 16 times<br>H'00000005: 32 times<br>H'00000006: 64 times<br>H'00000007: 128 times<br>H'00000008: 256 times<br>H'00000009: 512 times<br>H'0000000A: 1024 times | C000 | 0492 | 0924 | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | ○ | |
| Event input setting 1 | 0:P.CSP | H'00000000 P.CSP (Pulse entering count) H'00000001 H-ON (ON time of pulse enter) H'00000002 3-ST (3-STATE sorting) | C000 | 0493 | 0926 | | | ○ | | | | | | | |
| Event input setting 2 | | | C000 | 0494 | 0928 | | | ○ | | | | | | | |
| Event input setting 3 | | | C000 | 0495 | 092A | | | ○ | | | | | | | |
| Event input setting 4 | | | C000 | 0496 | 092C | | | ○ | | | | | | | |
| Event input setting 5 | | | C000 | 0497 | 092E | | | ○ | | | | | | | |
| Event input setting 6 | | | C000 | 0498 | 0930 | | | ○ | | | | | | | |
| Event input setting 7 | | | C000 | 0499 | 0932 | | | ○ | | | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Event input 1 NPN/PNP Input mode setting | 0:PNP | H'00000000: PNP<br>H'00000001: NPN | C000 | 049A | 0934 | | | ○ | | | | | | | |
| Event input 2 NPN/PNP Input mode setting | | | C000 | 049B | 0936 | | | ○ | | | | | | | |
| Event input 3 NPN/PNP Input mode setting | | | C000 | 049C | 0938 | | | ○ | | | | | | | |
| Event input 4 NPN/PNP Input mode setting | | | C000 | 049D | 093A | | | ○ | | | | | | | |
| Event input 5 NPN/PNP Input mode setting | | | C000 | 049E | 093C | | | ○ | | | | | | | |
| Event input 6 NPN/PNP Input mode setting | | | C000 | 049F | 093E | | | ○ | | | | | | | |
| Event input 7 NPN/PNP Input mode setting | | | C000 | 04A0 | 0940 | | | ○ | | | | | | | |
| Event input 1 Input mode setting | 0:N-O | H'00000000: N-O<br>(Normal open)<br>H'00000001:N-C<br>(Normal close) | C000 | 04A1 | 0942 | | | ○ | | | | | | | |
| Event input 2 Input mode setting | | | C000 | 04A2 | 0944 | | | ○ | | | | | | | |
| Event input 3 Input mode setting | | | C000 | 04A3 | 0946 | | | ○ | | | | | | | |
| Event input 4 Input mode setting | | | C000 | 04A4 | 0948 | | | ○ | | | | | | | |
| Event input 5 Input mode setting | | | C000 | 04A5 | 094A | | | ○ | | | | | | | |
| Event input 6 Input mode setting | | | C000 | 04A6 | 094C | | | ○ | | | | | | | |
| Event input 7 Input mode setting | | | C000 | 04A7 | 094E | | | ○ | | | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement start time | 00:00 | H'0000HHMM - H'0000HHMM<br>(00:00 - 23:59)<br>HH: Hour H'00-H'17(00 - 23)<br>MM: Minute H'00-H'3B(00-59) | C000 | 04A8 | 0950 | ○ | ○ | | | | | | | | |
| Measurement end time | 24:00 | H'0000HHMM - H'0000HHMM<br>(00:01- 24:00)<br>HH: Hour H'00-H'18<br>(00 - 24)<br>MM: Minute H'00-H'3B<br>(00 - 59) | C000 | 04A9 | 0952 | ○ | ○ | | | | | | | | |
| Measurement Block 1 3-STATE target | 4: No | H'00000000: Electric power<br>H'00000001: Current<br>H'00000002: Voltage<br>H'00000003: Event input<br>H'00000004: No | C000 | 04AA | 0954 | ○ | ○ | | | | | | | | |
| Measurement Block 2 3-STATE target | | | C000 | 04AB | 0956 | | ○ | | | | | | | | |
| Measurement Block 1 3-STATE/power original unit Event input | 0:1 and 2 | (Terminal for event input)<br>H'00000000: 1 and 2<br>H'00000001: 3 and 4<br>H'00000002: 5 and 6 | C000 | 04AC | 0958 | ○ | ○ | | | | | | | | |
| Measurement Block 2 3-STATE/power original unit Event input | | | C000 | 04AD | 095A | | ○ | | | | | | | | |
| Measurement Block 1 3-STATEHIGH Threshold * 1 | 1000 | H'F8D8F200-H'07270E00<br>(-120000000-120000000) | C000 | 04AE | 095C | ○ | ○ | | | | | | | | |
| Measurement Block 2 3-STATEHIGH Threshold * 1 | | | C000 | 04AF | 095E | | ○ | | | | | | | | |
| Measurement Block 1 3-STATE LOW Threshold *1 | 800 | H'F8D8F200-H'07270E00<br>(-120000000-120000000) | C000 | 04B0 | 0960 | ○ | ○ | | | | | | | | |
| Measurement Block 2 3-STATE LOW Threshold *1 | | | C000 | 04B1 | 0962 | | ○ | | | | | | | | |
| Measurement Block 1 3-STATE Hysteresis *1 | 50 | H'00000000-H'016E3600<br>(0-24000000) | C000 | 04B2 | 0964 | ○ | ○ | | | | | | | | |
| Measurement Block 2 3-STATE Hysteresis *1 | | | C000 | 04B3 | 0966 | | ○ | | | | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Temperature unit | 0: C | H'00000000: Celsius (C)<br>H'00000001: Fahrenheit (F) | C000 | 04B4 | 0968 | | | ○ | | | | | | | |
| Temperature compensation 1 | 0 (C or F) | H'FFFFFE0C - H'000001F4(-50.0 - 50.0)<br>* 1 digit after the decimal point fixed | C000 | 04B5 | 096A | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 1 | 1.00 | H'00000000 - H'000F423F<br>(0.01 - 9999.99)<br>* 2 digits after the decimal point fixed | C000 | 04C5 | 098A | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 2 | | | C000 | 04C6 | 098C | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 3 | | | C000 | 04C7 | 098E | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 4 | | | C000 | 04C8 | 0990 | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 5 | | | C000 | 04C9 | 0992 | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 6 | | | C000 | 04CA | 0994 | | | ○ | | | | | | | |
| Pulse conversion coefficient setting 7 | | | C000 | 04CB | 0996 | | | ○ | | | | | | | |
| Pulse output unit | 2:100 Wh | H'00000000: 1 Wh<br>H'00000001: 10 Wh<br>H'00000002: 100 Wh<br>H'00000003: 1 kWh<br>H'00000004: 2 kWh<br>H'00000005: 5 kWh<br>H'00000006: 10 kWh<br>H'00000007: 20 kWh<br>H'00000008: 50 kWh<br>H'00000009: 100 kWh | C000 | 04DC | 09B8 | ○ | ○ | | ○ | ○ | | | | | |
| Pulse output circuit | 0: Circuit 1 | H'00000000: Circuit 1<br>H'00000001: Circuit 2<br>H'00000002: Circuit 3<br>H'00000003: Circuit 4 | C000 | 04DD | 09BA | ○ | ○ | | ○ | ○ | | | | | |
| Total power coefficient 1 | 1 | H'00000000 - H'0098967F<br>(0.000 - 9999.999)<br>* 3 digits after the decimal point fixed | C000 | 04DE | 09BC | ○ | ○ | | ○ | ○ | | | ○ | | |
| Total power coefficient 2 | | | C000 | 04DF | 09BE | | ○ | | | | | | ○ | | |
| Phase-loss detection | 0:OFF | H'00000000: OFF<br>H'00000001: ON | C000 | 04E0 | 09C0 | | | | ○ | ○ | ○ | ○ | | | |
| Phase-sequence detection | 0:OFF | H'00000000: OFF<br>H'00000001: ON | C000 | 04E1 | 09C2 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Back up at instantaneous voltage drop | 0:OFF | H'00000000: OFF<br>H'00000001: ON | C000 | 04E2 | 09C4 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection 1 | 0:OFF | H'00000000: OFF<br>H'00000001:<br>Vrs (Three phase 3-wire, single phase 2-wire, single phase 3-wire),<br>Vrn (Three phase 4-wire)<br>H'00000002:<br>Vst (Three phase 3-wire, single phase 3-wire), Vsn (Three phase four wire)<br>H'00000003:<br>Vtr (Three phase 3-wire), Vtn (Three phase 4-wire) | C000 | 04E3 | 09C6 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection 2 | 0:OFF | H'00000000: OFF<br>H'00000001:<br>Vrs (Three phase 3-wire, single phase 2-wire, single phase 3-wire),<br>Vrn (Three phase 4-wire)<br>H'00000002:<br>Vst (Three phase 3-wire, single phase 3-wire), Vsn (Three phase four wire)<br>H'00000003:<br>Vtr (Three phase 3-wire), Vtn (Three phase 4-wire) | C000 | 04E4 | 09C8 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection 3 | 0:OFF | H'00000000: OFF<br>H'00000001:<br>Vrs (Three phase 3-wire, single phase 2-wire, single phase 3-wire),<br>Vrn (Three phase 4-wire)<br>H'00000002:<br>Vst (Three phase 3-wire, single phase 3-wire), Vsn (Three phase four wire)<br>H'00000003:<br>Vtr (Three phase 3-wire), Vtn (Three phase 4-wire) | C000 | 04E5 | 09CA | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection 4 | 0:OFF | H'00000000: OFF<br>H'00000001:<br>Vrs (Three phase 3-wire, single phase 2-wire, single phase 3-wire),<br>Vrn (Three phase 4-wire)<br>H'00000002:<br>Vst (Three phase 3-wire, single phase 3-wire), Vsn (Three phase four wire)<br>H'00000003:<br>Vtr (Three phase 3-wire), Vtn (Three phase 4-wire) | C000 | 04E6 | 09CC | | | | | ○ | ○ | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Instantaneous voltage drop detection voltage 1 | 80.0 V | H'00000000 - H'0001D8A8 (0 - 12100.0V) * 1 digit after the decimal point fixed | C000 | 04E7 | 09CE | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection voltage 2 | | | C000 | 04E8 | 09D0 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection voltage 3 | | | C000 | 04E9 | 09D2 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop detection voltage 4 | | | C000 | 04EA | 09D4 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop duration time 1 | 0.02 s | H'00000000 - H'00000064 (0.02 - 1.00s) * 2 digits after the decimal point fixed | C000 | 04EB | 09D6 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop duration time 2 | | | C000 | 04EC | 09D8 | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop duration time 3 | | | C000 | 04ED | 09DA | | | | | ○ | ○ | | | | |
| Instantaneous voltage drop duration time 4 | | | C000 | 04EE | 09DC | | | | | ○ | ○ | | | | |
| Earth leakage comparison set value 1 | 30 mA | H'0000001E - H'000003E8 (30 -1000mA) | C000 | 04EF | 09DE | | | | ○ | | | | | ○ | |
| Earth leakage comparison set value 2 | | | C000 | 04F0 | 09E0 | | | | | | | | | ○ | |
| Earth leakage comparison set value 3 | | | C000 | 04F1 | 09E2 | | | | | | | | | ○ | |
| Earth leakage comparison set value 4 | | | C000 | 04F2 | 09E4 | | | | | | | | | ○ | |
| Earth leakage comparison set value 5 | | | C000 | 04F3 | 09E6 | | | | | | | | | ○ | |
| Earth leakage comparison set value 6 | | | C000 | 04F4 | 09E8 | | | | | | | | | ○ | |
| Earth leakage comparison set value 7 | | | C000 | 04F5 | 09EA | | | | | | | | | ○ | |
| Earth leakage comparison set value 8 | | | C000 | 04F6 | 09EC | | | | | | | | | ○ | |
| Earth leakage operating time 1 | 0.5 s | H'- H'000000C8 (0.1 - 20.0s) * 1 digit after the decimal point fixed | C000 | 04F7 | 09EE | | | | ○ | | | | | ○ | |
| Earth leakage operating time 2 | | | C000 | 04F8 | 09F0 | | | | | | | | | ○ | |
| Earth leakage operating time 3 | | | C000 | 04F9 | 09F2 | | | | | | | | | ○ | |
| Earth leakage operating time 4 | | | C000 | 04FA | 09F4 | | | | | | | | | ○ | |
| Earth leakage operating time 5 | | | C000 | 04FB | 09F6 | | | | | | | | | ○ | |
| Earth leakage operating time 6 | | | C000 | 04FC | 09F8 | | | | | | | | | ○ | |
| Earth leakage operating time 7 | | | C000 | 04FD | 09FA | | | | | | | | | ○ | |
| Earth leakage operating time 8 | | | C000 | 04FE | 09FC | | | | | | | | | ○ | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Output terminal 1 function setting | 0:OFF | H'00000000: OFF<br>H'00000001: Measurement Block 1 alarm<br>H'00000002: Measurement Block 2 alarm<br>H'00000003: Earth leakage<br>H'00000004: Temperature<br>H'00000005: Phase-loss<br>H'00000006: Phase-sequence<br>H'00000007: Pulse output<br>H'00000008: Measurement Block 1 3-STATE HIGH<br>H'00000009: Measurement Block 1 3-STATE MIDDLE<br>H'0000000A: Measurement Block 1 3-STATE HLOW<br>H'0000000B: Measurement Block 2 3-STATE HIGH<br>H'0000000C: Measurement Block 2 3-STATE MIDDLE<br>H'0000000D: Measurement Block 2 3-STATE HLOW | C000 | 04FF | 09FE | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | |
| Output terminal 2 function setting | 0:OFF | | C000 | 0500 | 0A00 | ○ | ○ | ○ | ○ | ○ | | ○ | | | |
| Output terminal 3 function setting | 0:OFF | | C000 | 0501 | 0A02 | ○ | ○ | ○ | | | | | | | |
| Output terminal 1 condition | 0:N-O | H'00000000:N-O (Normal open)<br>H'00000001:N-C (Normal close) | C000 | 0502 | 0A04 | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ | |
| Output terminal 2 condition | | | C000 | 0503 | 0A06 | ○ | ○ | ○ | ○ | ○ | | ○ | | | |
| Output terminal 3 condition | | | C000 | 0504 | 0A08 | ○ | ○ | ○ | | | | | | | |
| Measurement Block 1 Alarm parameter setting | H'00000000 | H'00000001 0bit: Over voltage alarm<br>H'00000002 1bit: Under voltage alarm<br>H'00000004 2bit: Over current alarm<br>H'00000008 3bit: Under current alarm<br>H'00000010 4bit: Active power upper limit alarm<br>H'00000020 5bit: Active power lower limit alarm<br>H'00000040 6bit: Reactive power upper limit alarm<br>H'00000080 7bit: Reactive power lower limit alarm<br>H'00000100 8bit: Power factor alarm<br>H'00000200 - H'000001FF 9 - 31bit: Empty | C000 | 0505 | 0A0A | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | | |
| Measurement Block 2 Alarm parameter setting | | | C000 | 0506 | 0A0C | | ○ | | | | | | ○ | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 1 Alarm output setting | H'0000 0000 | H'00000001 0bit: Over voltage alarm<br>H'00000002 1bit: Under voltage alarm<br>H'00000004 2bit: Over current alarm<br>H'00000008 3bit: Under current alarm<br>H'00000010 4bit: Active power upper limit alarm<br>H'00000020 5bit: Active power lower limit alarm<br>H'00000040 6bit: Reactive power upper limit alarm<br>H'00000080 7bit: Reactive power lower limit alarm<br>H'00000100 8bit: Power factor alarm<br>H'00000200 - H'000001FF<br>9 - 31bit: Empty | C000 | 0507 | 0A0E | ○ | ○ | | ○ | ○ | ○ | ○ | ○ | | |
| Measurement Block 2 Alarm output setting | | | C000 | 0508 | 0A10 | | ○ | | | | | | ○ | | |
| Measurement Block 1 Active power upper limit alarm threshold | 1000 W | H'F8D8F200-H'07270E00(-120000000-120000000W) | C000 | 0509 | 0A12 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Active power upper limit alarm hysteresis | 100 W | H'00000000-H'016E3600 (0-24000000W) | C000 | 050A | 0A14 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Active power upper limit alarm on-delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 050B | 0A16 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Active power lower limit alarm threshold | 300 W | H'F8D8F200-H'07270E00 (-120000000-120000000W) | C000 | 050C | 0A18 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Active power lower limit alarm hysteresis | 100 W | H'00000000-H'016E3600 (0-24000000W) | C000 | 050D | 0A1A | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Active power lower limit alarm on -delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 050E | 0A1C | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 2 Active power upper limit alarm threshold | 1000 W | H'F8D8F200-H'07270E00(-120000000-120000000W) | C000 | 050F | 0A1E | | ○ | | | | | | ○ | | |
| Measurement Block 2 Active power upper limit alarm hysteresis | 100 W | H'00000000-H'016E3600 (0-24000000W) | C000 | 0510 | 0A20 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Active power upper limit alarm on-delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 0511 | 0A22 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Active power lower limit alarm threshold | 300 W | H'F8D8F200-H'07270E00 (-120000000-120000000W) | C000 | 0512 | 0A24 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Active power lower limit alarm hysteresis | 100 W | H'00000000-H'016E3600 (0-24000000W) | C000 | 0513 | 0A26 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Active power lower limit alarm on -delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 0514 | 0A28 | | ○ | | | | | | ○ | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 1 Over current alarm threshold | 100.0 A | H'00000000 - H'0000EA60 (0 - 6000.0A) * 1 digit after the decimal point fixed | C000 | 0515 | 0A2A | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 1 Over current alarm hysteresis | 5.0 A | H'00000000 - H'00002710 (0 - 1000.0A) * 1 digit after the decimal point fixed | C000 | 0516 | 0A2C | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 1 Over current alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.0 - 10.0s) * 1 digit after the decimal point fixed | C000 | 0517 | 0A2E | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 1 Under current alarm threshold | 10.0 A | H'00000000 - H'0000EA60 (0 - 6000.0A) * 1 digit after the decimal point fixed | C000 | 0518 | 0A30 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 1 Under current alarm hysteresis | 5.0 A | H'00000000 - H'00002710 (0 - 1000.0A) * 1 digit after the decimal point fixed | C000 | 0519 | 0A32 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 1 Under current alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 051A | 0A34 | ○ | ○ | | ○ | ○ | | ○ | ○ | | |
| Measurement Block 2 Over current alarm threshold | 100.0 A | H'00000000 - H'0000EA60 (0 - 6000.0A) * 1 digit after the decimal point fixed | C000 | 051B | 0A36 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Over current alarm hysteresis | 5.0 A | H'00000000 - H'00002710 (0 - 1000.0A) * 1 digit after the decimal point fixed | C000 | 051C | 0A38 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Over current alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 051D | 0A3A | | ○ | | | | | | ○ | | |
| Measurement Block 2 Under current alarm threshold | 10.0 A | H'00000000 - H'0000EA60 (0 - 6000.0V) * 1 digit after the decimal point fixed | C000 | 051E | 0A3C | | ○ | | | | | | ○ | | |
| Measurement Block 2 Under current alarm hysteresis | 5.0 A | H'00000000 - H'00002710 (0 - 1000.0V) * 1 digit after the decimal point fixed | C000 | 051F | 0A3E | | ○ | | | | | | ○ | | |
| Measurement Block 2 Under current alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 0520 | 0A40 | | ○ | | | | | | ○ | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 1 Over voltage alarm threshold | 528.0 V | H'00000000 - H'0001D8A8 (0 - 12100.0V) * 1 digit after the decimal point fixed | C000 | 0521 | 0A42 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 1 Over voltage alarm hysteresis | 24.0 V | H'00000000 - H'000055F0 (0 - 2200.0V) * 1 digit after the decimal point fixed | C000 | 0522 | 0A44 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 1 Over voltage alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 0523 | 0A46 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 1 Under voltage alarm threshold | 85.0 V | H'00000000 - H'0001D8A8 (0 - 12100.0V) * 1 digit after the decimal point fixed | C000 | 0524 | 0A48 | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 1 Under voltage alarm hysteresis | 24.0 V | H'00000000 - H'000055F0 (0 - 2200.0V) * 1 digit after the decimal point fixed | C000 | 0525 | 0A4A | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 1 Under voltage alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 0526 | 0A4C | ○ | ○ | | ○ | ○ | ○ | ○ | | | |
| Measurement Block 2 Over voltage alarm threshold | 528.0 V | H'00000000 - H'0001D8A8 (0 - 12100.0V) * 1 digit after the decimal point fixed | C000 | 0527 | 0A4E | | ○ | | | | | | | | |
| Measurement Block 2 Over voltage alarm hysteresis | 24.0 V | H'00000000 - H'000055F0 (0 - 2200.0V) * 1 digit after the decimal point fixed | C000 | 0528 | 0A50 | | ○ | | | | | | | | |
| Measurement Block 2 Over voltage alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 0529 | 0A52 | | ○ | | | | | | | | |
| Measurement Block 2 Under voltage alarm threshold | 85.0 V | H'00000000 - H'0001D8A8 (0 - 12100.0V) * 1 digit after the decimal point fixed | C000 | 052A | 0A54 | | ○ | | | | | | | | |
| Measurement Block 2 Under voltage alarm hysteresis | 24.0 V | H'00000000 - H'000055F0 (0 - 2200.0V) * 1 digit after the decimal point fixed | C000 | 052B | 0A56 | | ○ | | | | | | | | |
| Measurement Block 2 Under voltage alarm on-delay | 0.1 s | H'00000001- H'00000064 (0.1- 10.0s) * 1 digit after the decimal point fixed | C000 | 052C | 0A58 | | ○ | | | | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 1 Power factor alarm threshold | 0.00 | H'FFFFFF9C - H'00000064<br>(-1.00 - 1.00)<br>* 2 digits after the decimal point fixed | C000 | 052D | 0A5A | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Power factor alarm hysteresis | 0.05 | H'00000000 - H'00000064<br>(0.00 - 1.00)<br>* 2 digits after the decimal point fixed | C000 | 052E | 0A5C | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Power factor alarm on-delay | 0.5 s | H'00000005 - H'00000064<br>(0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 052F | 0A5E | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 2 Power factor alarm threshold | 0.00 | H'FFFFFF9C - H'00000064<br>(-1.00 - 1.00)<br>* 2 digits after the decimal point fixed | C000 | 0530 | 0A60 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Power factor alarm hysteresis | 0.05 | H'00000000 - H'00000064<br>(0.00 - 1.00)<br>* 2 digits after the decimal point fixed | C000 | 0531 | 0A62 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Power factor alarm on-delay | 0.5 s | H'00000005 - H'00000064<br>(0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 0532 | 0A64 | | ○ | | | | | | ○ | | |
| Measurement Block 1 Reactive power upper limit alarm threshold | 1000 var | H'F8D8F200-H'07270E00<br>(-120000000-120000000var) | C000 | 0533 | 0A66 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Reactive power upper limit alarm hysteresis | 100 var | H'00000000-H'016E3600<br>(0-24000000var) | C000 | 0534 | 0A68 | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Reactive power upper limit alarm on-delay | 0.5 s | H'00000005 - H'00000064<br>(0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 0535 | 0A6A | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Reactive power lower limit alarm threshold | 300 var | H'F8D8F200-H'07270E00<br>(-120000000-120000000var) | C000 | 0536 | 0A6C | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Reactive power lower limit alarm hysteresis | 100 var | H'00000000-H'016E3600<br>(0-24000000var) | C000 | 0537 | 0A6E | ○ | ○ | | ○ | ○ | | | ○ | | |
| Measurement Block 1 Reactive power lower limit alarm on-delay | 0.5 s | H'00000005 - H'00000064<br>(0.5 - 10.0s)<br>* 1 digit after the decimal point fixed | C000 | 0538 | 0A70 | ○ | ○ | | ○ | ○ | | | ○ | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Measurement Block 2 Reactive power upper limit alarm threshold | 1000 var | H'F8D8F200-H'07270E00 (-120000000-120000000var) | C000 | 0539 | 0A72 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Reactive power upper limit alarm hysteresis | 100 var | H'00000000-H'016E3600 (0-24000000var) | C000 | 053A | 0A74 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Reactive power upper limit alarm on-delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s) * 1 digit after the decimal point fixed | C000 | 053B | 0A76 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Reactive power lower limit alarm threshold | 300 var | H'F8D8F200-H'07270E00 (-120000000-120000000var) | C000 | 053C | 0A78 | | ○ | | | | | | ○ | | |
| Measurement Block 2 Reactive power lower limit alarm hysteresis | 100 var | H'00000000-H'016E3600 (0-24000000var) | C000 | 053D | 0A7A | | ○ | | | | | | ○ | | |
| Measurement Block 2 Reactive power lower limit alarm on-delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s) * 1 digit after the decimal point fixed | C000 | 053E | 0A7C | | ○ | | | | | | ○ | | |
| Upper-limit temperature alarm threshold | 80.0 | H'FFFFFDBC - H'00000848 (-58.0 - 212.0) * 1 digit after the decimal point fixed | C000 | 053F | 0A7E | | | ○ | | | | | | | |
| Upper-limit temperature alarm hysteresis | 5.0 | H'00000000 - H'00000064 (0.0 - 10.0) * 1 digit after the decimal point fixed | C000 | 0540 | 0A80 | | | ○ | | | | | | | |
| Upper-limit temperature alarm on-delay | 0.5 s | H'00000005 - H'00000064 (0.5 - 10.0s) * 1 digit after the decimal point fixed | C000 | 0541 | 0A82 | | | ○ | | | | | | | |
| Lower-limit temperature alarm threshold | 0.0 | H'FFFFFDBC - H'00000848 (-58.0 - 212.0) * 1 digit after the decimal point fixed | C000 | 0542 | 0A84 | | | ○ | | | | | | | |
| Lower-limit temperature alarm hysteresis | 5.0 | H'00000000 - H'00000064 (0.0 - 10.0) * 1 digit after the decimal point fixed | C000 | 0543 | 0A86 | | | ○ | | | | | | | |
| Lower-limit temperature alarm on-delay | 0.5s | H'00000005 - H'00000064 (0.5 - 10.0s) * 1 digit after the decimal point fixed | C000 | 0544 | 0A88 | | | ○ | | | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Active input setting | H'000000FF | H'00000001 0bit: Input 1<br>H'00000002 1bit: Input 2<br>H'00000004 2bit: Input 3<br>H'00000008 3bit: Input 4<br>H'00000010 4bit: Input 5<br>H'00000020 5bit: Input 6<br>H'00000040 6bit: Input 7<br>H'00000080 7bit: Input 8<br>H'00000100 - H'000000FF<br>8 - 31bit: Empty | C000 | 0545 | 0A8A | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | |
| Unit no. | 01 | H'00000000-H'00000063<br>(0-99) | C000 | 0580 | 0B00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Communication speed | 0: 9.6 kbps | H'00000000 0: 9.6 kbps<br>H'00000001 1: 19.2 kbps<br>H'00000002 2: 38.4 kbps | C000 | 0581 | 0B02 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ |
| Data bit length * 2 | 0: 7 bits | H'00000000 0: 7 bits<br>H'00000001 1: 8 bits | C000 | 0582 | 0B04 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ |
| Stop bit length *3 | 1: 2 bits | H'00000000 0: 1bit<br>H'00000001 1: 2 bits | C000 | 0583 | 0B06 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ |
| Vertical parity | 1: Even number | H'00000000 0: No<br>H'00000001 1: Even number<br>H'00000002 2: Odd number | C000 | 0584 | 0B08 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ |
| Transmission wait time | 20 ms | H'00000000-H'00000063<br>(0-99ms) | C000 | 0585 | 0B0A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | ○ |
| Channel 0 bit 0-3 allocation unit | 0 | ● Refer to ch0, ch1 (IN) allocation item list | C000 | 0586 | 0B0C | | | | | | | | | | ○ |
| Channel 0 bit 4-7 allocation unit | | | C000 | 0587 | 0B0E | | | | | | | | | | ○ |
| Channel 0 bit 8-11 allocation unit | | | C000 | 0588 | 0B10 | | | | | | | | | | ○ |
| Channel 0 bit 12-15 allocation unit | | | C000 | 0589 | 0B12 | | | | | | | | | | ○ |
| Channel 1 bit 0-3 allocation unit | | | C000 | 058A | 0B14 | | | | | | | | | | ○ |
| Channel 1 bit 4-7 allocation unit | | | C000 | 058B | 0B16 | | | | | | | | | | ○ |
| Channel 1 bit 8-11 allocation unit | | | C000 | 058C | 0B18 | | | | | | | | | | ○ |
| Channel 1 bit 12-15 allocation unit | | | C000 | 058D | 0B1A | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 2-5 allocation unit | 0 | ● Refer to ch2-60 (IN) allocation item list | C000 | 058E | 0B1C | | | | | | | | | | ○ |
| Channel 6-9 allocation unit | | | C000 | 058F | 0B1E | | | | | | | | | | ○ |
| Channel 10-13 allocation unit | | | C000 | 0590 | 0B20 | | | | | | | | | | ○ |
| Channel 14-17 allocation unit | | | C000 | 0591 | 0B22 | | | | | | | | | | ○ |
| Channel 18-21 allocation unit | | | C000 | 0592 | 0B24 | | | | | | | | | | ○ |
| Channel 22-25 allocation unit | | | C000 | 0593 | 0B26 | | | | | | | | | | ○ |
| Channel 26-29 allocation unit | | | C000 | 0594 | 0B28 | | | | | | | | | | ○ |
| Channel 30-33 allocation unit | | | C000 | 0595 | 0B2A | | | | | | | | | | ○ |
| Channel 34-37 allocation unit | | | C000 | 0596 | 0B2C | | | | | | | | | | ○ |
| Channel 38-41 allocation unit | | | C000 | 0597 | 0B2E | | | | | | | | | | ○ |
| Channel 42-45 allocation unit | | | C000 | 0598 | 0B30 | | | | | | | | | | ○ |
| Channel 46-49 allocation unit | | | C000 | 0599 | 0B32 | | | | | | | | | | ○ |
| Channel 50-53 allocation unit | | | C000 | 059A | 0B34 | | | | | | | | | | ○ |
| Channel 54-57 allocation unit | | | C000 | 059B | 0B36 | | | | | | | | | | ○ |
| Channel 58-60 allocation unit | | | C000 | 059C | 0B38 | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 0 bit0 allocation status item | 0 | ● Refer to IN Area ch0, ch1 bit allocation element list | C000 | 059D | 0B3A | | | | | | | | | | ○ |
| Channel 0 bit1 allocation status item | | | C000 | 059E | 0B3C | | | | | | | | | | ○ |
| Channel 0 bit2 allocation status item | | | C000 | 059F | 0B3E | | | | | | | | | | ○ |
| Channel 0 bit3 allocation status item | | | C000 | 05A0 | 0B40 | | | | | | | | | | ○ |
| Channel 0 bit4 allocation status item | | | C000 | 05A1 | 0B42 | | | | | | | | | | ○ |
| Channel 0 bit5 allocation status item | | | C000 | 05A2 | 0B44 | | | | | | | | | | ○ |
| Channel 0 bit6 allocation status item | | | C000 | 05A3 | 0B46 | | | | | | | | | | ○ |
| Channel 0 bit7 allocation status item | | | C000 | 05A4 | 0B48 | | | | | | | | | | ○ |
| Channel 0 bit8 allocation status item | | | C000 | 05A5 | 0B4A | | | | | | | | | | ○ |
| Channel 0 bit9 allocation status item | | | C000 | 05A6 | 0B4C | | | | | | | | | | ○ |
| Channel 0 bit10 allocation status item | | | C000 | 05A7 | 0B4E | | | | | | | | | | ○ |
| Channel 0 bit11 allocation status item | | | C000 | 05A8 | 0B50 | | | | | | | | | | ○ |
| Channel 0 bit12 allocation status item | | | C000 | 05A9 | 0B52 | | | | | | | | | | ○ |
| Channel 0 bit13 allocation status item | | | C000 | 05AA | 0B54 | | | | | | | | | | ○ |
| Channel 0 bit14 allocation status item | | | C000 | 05AB | 0B56 | | | | | | | | | | ○ |
| Channel 0 bit15 allocation status item | | | C000 | 05AC | 0B58 | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 1 bit0 allocation status item | 0 | ● Refer to IN Area ch0, ch1 bit allocation element list | C000 | 05AD | 0B5A | | | | | | | | | | ○ |
| Channel 1 bit1 allocation status item | | | C000 | 05AE | 0B5C | | | | | | | | | | ○ |
| Channel 1 bit2 allocation status item | | | C000 | 05AF | 0B5E | | | | | | | | | | ○ |
| Channel 1 bit3 allocation status item | | | C000 | 05B0 | 0B60 | | | | | | | | | | ○ |
| Channel 1 bit4 allocation status item | | | C000 | 05B1 | 0B62 | | | | | | | | | | ○ |
| Channel 1 bit5 allocation status item | | | C000 | 05B2 | 0B64 | | | | | | | | | | ○ |
| Channel 1 bit6 allocation status item | | | C000 | 05B3 | 0B66 | | | | | | | | | | ○ |
| Channel 1 bit7 allocation status item | | | C000 | 05B4 | 0B68 | | | | | | | | | | ○ |
| Channel 1 bit8 allocation status item | | | C000 | 05B5 | 0B6A | | | | | | | | | | ○ |
| Channel 1 bit9 allocation status item | | | C000 | 05B6 | 0B6C | | | | | | | | | | ○ |
| Channel 1 bit10 allocation status item | | | C000 | 05B7 | 0B6E | | | | | | | | | | ○ |
| Channel 1 bit11 allocation status item | | | C000 | 05B8 | 0B70 | | | | | | | | | | ○ |
| Channel 1 bit12 allocation status item | | | C000 | 05B9 | 0B72 | | | | | | | | | | ○ |
| Channel 1 bit13 allocation status item | | | C000 | 05BA | 0B74 | | | | | | | | | | ○ |
| Channel 1 bit14 allocation status item | | | C000 | 05BB | 0B76 | | | | | | | | | | ○ |
| Channel 1 bit15 allocation status item | | | C000 | 05BC | 0B78 | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 2 Measurement No. | 0 | ● Refer to IN Area ch2-60 allocation element list | C000 | 05BD | 0B7A | | | | | | | | | | ○ |
| Channel 3 Measurement No. | | | C000 | 05BE | 0B7C | | | | | | | | | | ○ |
| Channel 4 Measurement No. | | | C000 | 05BF | 0B7E | | | | | | | | | | ○ |
| Channel 5 Measurement No. | | | C000 | 05C0 | 0B80 | | | | | | | | | | ○ |
| Channel 6 Measurement No. | | | C000 | 05C1 | 0B82 | | | | | | | | | | ○ |
| Channel 7 Measurement No. | | | C000 | 05C2 | 0B84 | | | | | | | | | | ○ |
| Channel 8 Measurement No. | | | C000 | 05C3 | 0B86 | | | | | | | | | | ○ |
| Channel 9 Measurement No. | | | C000 | 05C4 | 0B88 | | | | | | | | | | ○ |
| Channel 10 Measurement No. | | | C000 | 05C5 | 0B8A | | | | | | | | | | ○ |
| Channel 11 Measurement No. | | | C000 | 05C6 | 0B8C | | | | | | | | | | ○ |
| Channel 12 Measurement No. | | | C000 | 05C7 | 0B8E | | | | | | | | | | ○ |
| Channel 13 Measurement No. | | | C000 | 05C8 | 0B90 | | | | | | | | | | ○ |
| Channel 14 Measurement No. | | | C000 | 05C9 | 0B92 | | | | | | | | | | ○ |
| Channel 15 Measurement No. | | | C000 | 05CA | 0B94 | | | | | | | | | | ○ |
| Channel 16 Measurement No. | | | C000 | 05CB | 0B96 | | | | | | | | | | ○ |
| Channel 17 Measurement No. | | | C000 | 05CC | 0B98 | | | | | | | | | | ○ |
| Channel 18 Measurement No. | | | C000 | 05CD | 0B9A | | | | | | | | | | ○ |
| Channel 19 Measurement No. | | | C000 | 05CE | 0B9C | | | | | | | | | | ○ |
| Channel 20 Measurement No. | | | C000 | 05CF | 0B9E | | | | | | | | | | ○ |
| Channel 21 Measurement No. | | | C000 | 05D0 | 0BA0 | | | | | | | | | | ○ |
| Channel 22 Measurement No. | | | C000 | 05D1 | 0BA2 | | | | | | | | | | ○ |
| Channel 23 Measurement No. | | | C000 | 05D2 | 0BA4 | | | | | | | | | | ○ |
| Channel 24 Measurement No. | | | C000 | 05D3 | 0BA6 | | | | | | | | | | ○ |
| Channel 25 Measurement No. | | | C000 | 05D4 | 0BA8 | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 26 Measurement No. | 0 | ● Refer to IN Area ch2-60 allocation element list | C000 | 05D5 | 0BAA | | | | | | | | | | ○ |
| Channel 27 Measurement No. | | | C000 | 05D6 | 0BAC | | | | | | | | | | ○ |
| Channel 28 Measurement No. | | | C000 | 05D7 | 0BAE | | | | | | | | | | ○ |
| Channel 29 Measurement No. | | | C000 | 05D8 | 0BB0 | | | | | | | | | | ○ |
| Channel 30 Measurement No. | | | C000 | 05D9 | 0BB2 | | | | | | | | | | ○ |
| Channel 31 Measurement No. | | | C000 | 05DA | 0BB4 | | | | | | | | | | ○ |
| Channel 32 Measurement No. | | | C000 | 05DB | 0BB6 | | | | | | | | | | ○ |
| Channel 33 Measurement No. | | | C000 | 05DC | 0BB8 | | | | | | | | | | ○ |
| Channel 34 Measurement No. | | | C000 | 05DD | 0BBA | | | | | | | | | | ○ |
| Channel 35 Measurement No. | | | C000 | 05DE | 0BBC | | | | | | | | | | ○ |
| Channel 36 Measurement No. | | | C000 | 05DF | 0BBE | | | | | | | | | | ○ |
| Channel 37 Measurement No. | | | C000 | 05E0 | 0BC0 | | | | | | | | | | ○ |
| Channel 38 Measurement No. | | | C000 | 05E1 | 0BC2 | | | | | | | | | | ○ |
| Channel 39 Measurement No. | | | C000 | 05E2 | 0BC4 | | | | | | | | | | ○ |
| Channel 40 Measurement No. | | | C000 | 05E3 | 0BC6 | | | | | | | | | | ○ |
| Channel 41 Measurement No. | | | C000 | 05E4 | 0BC8 | | | | | | | | | | ○ |
| Channel 42 Measurement No. | | | C000 | 05E5 | 0BCA | | | | | | | | | | ○ |
| Channel 43 Measurement No. | | | C000 | 05E6 | 0BCC | | | | | | | | | | ○ |
| Channel 44 Measurement No. | | | C000 | 05E7 | 0BCE | | | | | | | | | | ○ |
| Channel 45 Measurement No. | | | C000 | 05E8 | 0BD0 | | | | | | | | | | ○ |
| Channel 46 Measurement No. | | | C000 | 05E9 | 0BD2 | | | | | | | | | | ○ |
| Channel 47 Measurement No. | | | C000 | 05EA | 0BD4 | | | | | | | | | | ○ |
| Channel 48 Measurement No. | | | C000 | 05EB | 0BD6 | | | | | | | | | | ○ |
| Channel 49 Measurement No. | | | C000 | 05EC | 0BD8 | | | | | | | | | | ○ |
| Channel 50 Measurement No. | | | C000 | 05ED | 0BDA | | | | | | | | | | ○ |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Channel 51 Measurement No. | 0 | ● Refer to IN Area ch2-60 allocation element list | C000 | 05EE | 0BDC | | | | | | | | | | ○ |
| Channel 52 Measurement No. | | | C000 | 05EF | 0BDE | | | | | | | | | | ○ |
| Channel 53 Measurement No. | | | C000 | 05F0 | 0BE0 | | | | | | | | | | ○ |
| Channel 54 Measurement No. | | | C000 | 05F1 | 0BE2 | | | | | | | | | | ○ |
| Channel 55 Measurement No. | | | C000 | 05F2 | 0BE4 | | | | | | | | | | ○ |
| Channel 56 Measurement No. | | | C000 | 05F3 | 0BE6 | | | | | | | | | | ○ |
| Channel 57 Measurement No. | | | C000 | 05F4 | 0BE8 | | | | | | | | | | ○ |
| Channel 58 Measurement No. | | | C000 | 05F5 | 0BEA | | | | | | | | | | ○ |
| Channel 59 Measurement No. | | | C000 | 05F6 | 0BEC | | | | | | | | | | ○ |
| Channel 60 Measurement No. | | | C000 | 05F7 | 0BEE | | | | | | | | | | ○ |
| Connection configuration | 0: No connection | H'00000001 0bit: Slave ID 1 Yes or No<br>H'00000002 1bit: Slave ID 2 Yes or No<br>H'00000004 2bit: Slave ID 3 Yes or No<br>H'00000008 3bit: Slave ID 4 Yes or No<br>H'00000010 4bit: Slave ID 5 Yes or No<br>H'00000020 5bit: Salve ID 6 Yes or No<br>*specified by bits (0: Yes; 1: No) | C000 | 05F8 | 0BF0 | ○ | ○ | | ○ | ○ | | | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Log 1 storage target | 28: Voltage MAX 1<br>98: Temperature MAX 1only for EMU8 | ● Setting of log storage target | C000 | 0680 | 0D00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 2 storage target | 29: Voltage MAX 2<br>A0: Temperature MIN 1only for EMU8 | | C000 | 0681 | 0D02 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 3 storage target | 2A: Voltage MAX 3<br>B8:ON time of pulse enter 1 only for EMU8 | | C000 | 0682 | 0D04 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 4 storage target | 2E: Voltage MIN 1<br>B9:ON time of pulse enter 2 only for EMU8 | | C000 | 0683 | 0D06 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 5 storage target | 2F: Voltage MIN 2<br>BF: Pulse entering count 1 only for EMU8 | | C000 | 0684 | 0D08 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 6 storage target | 30:Voltage MIN 3<br>C0:Pulse entering count 2 only for EMU8 | | C000 | 0685 | 0D0A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 1 storage cycle | 0.5 minute | H'00000000 0: 5 min<br>H'00000001 1: 10 min<br>H'00000002 2: 30 min<br>H'00000003 3: 1h<br>H'00000004 4: 2h<br>H'00000005 5: 6h<br>H'00000006 6: 12h<br>H'00000007 7: 24h | C000 | 0686 | 0D0C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 2 storage cycle | 0.5 minute | | C000 | 0687 | 0D0E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 3 storage cycle | 0.5 minute | | C000 | 0688 | 0D10 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 4 storage cycle | 0.5 minute | | C000 | 0689 | 0D12 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 5 storage cycle | 0.5 minute | | C000 | 068A | 0D14 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Log 6 storage cycle | 0.5 minute | | C000 | 068B | 0D16 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

| Setting item | Setting value | | CompoWay/F | | Modbus | KM1 | | | KE1 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Initial value | Setting (monitor) value | Type | Address | | PMU1A | PMU2A | EMU8A | PGR1C | PVS1C | VSU1B | VAU1B | CTD8E | ZCT8E | DRT |
| Reading of main unit attributes 1 | Depending on the model | H' 4B4D312D<br>4B (ASCII code): "K"<br>4D (ASCII code): "M"<br>31 (ASCII code) : "1"<br>2D (ASCII code): "-" | - | - | 0F00 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Reading of main unit attributes 2 | Depending on the model | H' 504D5532<br>50 (ASCII code): "P"<br>4D (ASCII code): "M"<br>55 (ASCII code): "U"<br>32 (ASCII code): "2" | - | - | 0F02 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Reading of main unit attributes 3 | Depending on the model | H' 2D464C4B<br>2D (ASCII code): "-"<br>46 (ASCII code): "F"<br>4C (ASCII code): "L"<br>4B (ASCII code): "K" | - | - | 0F04 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Reading of main unit attributes 4 | Depending on the model | H' 000000E6<br>(230 in decimal format) | - | - | 0F06 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Time information (Month, day) | - | H' 00YYMMDD<br>YY: 2 digits of the year H'00 - H'63<br>(00 - 99)<br>MM: 2 digits of the month H' 00 - H' 0C<br>(01 - 12)<br>DD: 2 digits of the day H' 00 - H' 1F<br>(01 -31) | - | - | 0F08 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| Time information (Hour, minute) | - | H' 0000HHMMSS<br>HH: hour H' 00 - H' 17<br>(00 - 23)<br>MM: minute H'00 - H' 3B<br>(00 - 59)<br>SS: second H'00 - H'3B<br>(00 - 59) | - | - | 0F0A | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |

*1 The values for the voltage (V) and currents (A) are rounded off to one decimal place. For the electric power (W), the actual value is indicated.

*2 In case of selecting Modbus as a communication protocol, 8 bits are fixed for the communication data length.

*3 In case of selecting Modbus as a communication protocol, the value for the vertical parity is automatically set for the stop bit length.

Without vertical parity: 2 bits

With vertical parity: 1 bit

*4 The slave ID is set through the rotary switch on top of the product. (Functional slave, CT extension slave)

However, the value of "0" is fixed for the measurement master. The value of 6 is fixed for the communication slave.

## ● ch0, ch1 (IN) allocation item list

| ch | bit | Allocation target (Setting range) | Allocation target (Initial value) | Allocation target (In case of simplified allocation) | Allocation factor (Setting range) | Allocation factor (Initial value) | Allocation factor (In case of simplified allocation) |
|---|---|---|---|---|---|---|---|
| 0 | 0 | (b') 00000000-01111111 | (b') 00000000 | (b') 01111111 | (H') 00-16 | (H') 00 | H'00 |
| | 1 | | | | | | H'01 |
| | 2 | | | | | | H'02 |
| | 3 | | | | | | H'03 |
| | 4 | | | | | | H'04 |
| | 5 | | | | | | H'05 |
| | 6 | | | | | | H'06 |
| | 7 | | | | | | H'07 |
| | 8 | | | (b') 00000001 | | | H'0A |
| | 9 | | | | | | H'0B |
| | A | | | | | | H'0C |
| | B | | | | | | H'0D |
| | C | | | (b') 00000001 | | | H'12 |
| | D | | | | | | H'13 |
| | E | | | | | | H'14 |
| | F | | | | | | H'1C |
| 1 | 0 | | | (b') 00000001 | | | H'1D |
| | 1 | | | | | | H'15 |
| | 2 | | | | | | H'16 |
| | 3 | | | | | | H'17 |
| | 4 | | | (b') 00000010 | | | H'0A |
| | 5 | | | | | | H'0B |
| | 6 | | | | | | H'0C |
| | 7 | | | | | | H'0D |
| | 8 | | | (b') 00000010 | | | H'0E |
| | 9 | | | | | | H'0F |
| | A | | | | | | H'10 |
| | B | | | | | | H'11 |
| | C | | | (b') 00000010 | | | H'12 |
| | D | | | | | | H'13 |
| | E | | | | | | H'1C |
| | F | | | | | | H'1D |

## ● ch2-60 (IN) allocation item list

<table>
<tr><th>ch</th><th>Allocation target<br>(Setting range)</th><th>Allocation target<br>(Initial value)</th><th>Allocation target<br>(In case of simplified allocation)</th><th>Allocation factor<br>(Setting range)</th><th>Allocation factor<br>(Initial value)</th><th>Allocation factor<br>(In case of simplified allocation)</th></tr>
<tr><td>2</td><td rowspan="29">H’00000000-H’00000005</td><td rowspan="29">H’00000000</td><td rowspan="17">H’00000000</td><td rowspan="29">000-03C</td><td rowspan="29">000</td><td rowspan="17">*1</td></tr>
<tr><td>3</td></tr>
<tr><td>4</td></tr>
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<tr><td>15</td></tr>
<tr><td>16</td></tr>
<tr><td>17</td></tr>
<tr><td>18</td><td rowspan="12">H’00000001</td><td rowspan="12">*2</td></tr>
<tr><td>19</td></tr>
<tr><td>20</td></tr>
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<tr><td>28</td></tr>
<tr><td>29</td></tr>
</table>

| ch | Allocation target (Setting range) | Allocation target (Initial value) | Allocation target (In case of simplified allocation) | Allocation factor (Setting range) | Allocation factor (Initial value) | Allocation factor (In case of simplified allocation) |
|---|---|---|---|---|---|---|
| 30 | H’00000000-H’00000005 | H’00000000 | H’00000000 | 000-03C | 000 | 000 |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |
| 34 | | | | | | |
| 35 | | | | | | |
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*1 A measurement parameter is allocated to each unit of the measurement master that is connected to Model KE1-DRT-FLK.

*2 A measurement parameter is allocated to each unit of Slave ID 1 that is connected to Model KE1-DRT-FLK.

● IN Area ch0, ch1 bit allocation factor list

One factor can be allocated to each individual bit.

| Allocation range | Setting value | Meaning | Setting value | Meaning |
|---|---|---|---|---|
| ch0, 1 | 00 | RAM error (E-M1) | 12 | OUT1 |
| | 01 | EEPROM error (E-M2) | 13 | OUT2 |
| | 02 | EEPROM error (E-M3) | 14 | OUT3 |
| | 03 | RTC error (E-T1) | 15 | LOW condition 1 |
| | 04 | Communication error | 16 | MIDDLE condition 1 |
| | 05 | Operation mode | 17 | HIGH condition 1 |
| | 06 | Over input voltage (E-S1) | 18 | LOW condition 2 |
| | 07 | Over input current (E-S2) | 19 | MIDDLE condition 2 |
| | 08 | Insufficient input voltage | 1A | HIGH condition 2 |
| | 09 | Input frequency error (E-S3) | 1B | Empty |
| | 0A | Input 1 | 1C | Alarm 1 |
| | 0B | Input 2 | 1D | Alarm 2 |
| | 0C | Input 3 | 1E | Empty |
| | 0D | Input 4 | 1F | Empty |
| | 0E | Input 5 | | |
| | 0F | Input 6 | | |
| | 10 | Input 7 | | |
| | 11 | Input 8 | | |

● IN Area ch2 - 60 bit allocation factor list

| Meaning | Setting value now | Meaning | Setting value now | Meaning | Setting value now |
|---|---|---|---|---|---|
| Empty | 0000 | Power factor 3 | 0015 | Reactive power 6 | 002A |
| Voltage 1 | 0001 | Power factor 4 | 0016 | Reactive power 7 | 002B |
| Voltage 2 | 0002 | Power factor 5 | 0017 | Reactive power 8 | 002C |
| Voltage 3 | 0003 | Power factor 6 | 0018 | Temperature 1 | 002D |
| Voltage 4 | 0004 | Power factor 7 | 0019 | Temperature 2 | 002E |
| Voltage 5 | 0005 | Power factor 8 | 001A | Temperature 3 | 002F |
| Voltage 6 | 0006 | Frequency 1 | 001B | Temperature 4 | 0030 |
| Current 1 | 0007 | Frequency 2 | 001C | Temperature 5 | 0031 |
| Current 2 | 0008 | Active power 1 | 001D | Temperature 6 | 0032 |
| Current 3 | 0009 | Active power 2 | 001E | Temperature 7 | 0033 |
| Current 4 | 000A | Active power 3 | 001F | Temperature 8 | 0034 |
| Current 5 | 000B | Active power 4 | 0020 | Earth leakage 1 | 0035 |
| Current 6 | 000C | Active power 5 | 0021 | Earth leakage 2 | 0036 |
| Current 7 | 000D | Active power 6 | 0022 | Earth leakage 3 | 0037 |
| Current 8 | 000E | Active power 7 | 0023 | Earth leakage 4 | 0038 |
| Current 9 | 000F | Active power 8 | 0024 | Earth leakage 5 | 0039 |
| Current 10 | 0010 | Reactive power 1 | 0025 | Earth leakage 6 | 003A |
| Current 11 | 0011 | Reactive power 2 | 0026 | Earth leakage 7 | 003B |
| Current 12 | 0012 | Reactive power 3 | 0027 | Earth leakage 8 | 003C |
| Power factor 1 | 0013 | Reactive power 4 | 0028 | | |
| Power factor 2 | 0014 | Reactive power 5 | 0029 | | |

● Allocation factor list for each unit in case of simplified allocation (ch2 - 31)

| ch | PMU1A | PMU2A | PGR1C | PVS1C |
|---|---|---|---|---|
| 2 | Active power 1 | Active power 1 | Active power 1 | Active power 1 |
| 3 | Active power 2 | Active power 2 | Active power 2 | Active power 2 |
| 4 | Active power 3 | Active power 5 | Active power 3 | Active power 3 |
| 5 | Power factor 1 | Active power 6 | Power factor 1 | Power factor 1 |
| 6 | Power factor 2 | Power factor 1 | Power factor 2 | Power factor 2 |
| 7 | Power factor 3 | Power factor 2 | Power factor 3 | Power factor 3 |
| 8 | Voltage 1 | Power factor 5 | Voltage 1 | Voltage 1 |
| 9 | Voltage 2 | Power factor 6 | Voltage 2 | Voltage 2 |
| 10 | Voltage 3 | Voltage 1 | Voltage 3 | Voltage 3 |
| 11 | Current 1 | Voltage 3 | Current 1 | Current 1 |
| 12 | Current 2 | Voltage 4 | Current 2 | Current 2 |
| 13 | Current 3 | Voltage 6 | Current 3 | Current 3 |
| 14 | Frequency 1 | Current 1 | Frequency 1 | Frequency 1 |
| 15 | Empty | Current 3 | Earth leakage 1 | Empty |
| 16 | Empty | Current 7 | Empty | Empty |
| 17 | Empty | Current 9 | Empty | Empty |

| ch | EMU8A | VSU1B | VAU1B | CTD8E | ZCT8E |
|---|---|---|---|---|---|
| 18 | Temperature 1 | Voltage 1 | Current 1 | Active power 1 | Earth leakage 1 |
| 19 | Empty | Voltage 2 | Current 2 | Active power 2 | Earth leakage 2 |
| 20 | Empty | Voltage 3 | Current 3 | Active power 3 | Earth leakage 3 |
| 21 | Empty | Voltage 4 | Voltage 1 | Active power 4 | Earth leakage 4 |
| 22 | Empty | Voltage 5 | Voltage 2 | Active power 5 | Earth leakage 5 |
| 23 | Empty | Voltage 6 | Voltage 3 | Active power 6 | Earth leakage 6 |
| 24 | Empty | Frequency 1 | Voltage 4 | Active power 7 | Earth leakage 7 |
| 25 | Empty | Empty | Voltage 5 | Active power 8 | Earth leakage 8 |
| 26 | Empty | Empty | Voltage 6 | Empty | Empty |
| 27 | Empty | Empty | Frequency 1 | Empty | Empty |
| 28 | Empty | Empty | Empty | Empty | Empty |
| 29 | Empty | Empty | Empty | Empty | Empty |
| 30 | Empty | Empty | Empty | Empty | Empty |
| 31 | Empty | Empty | Empty | Empty | Empty |

# Appendix

# ASCII code table

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | NUL | DLE | SP | 0 | @ | P | ` | p |
| 1 | SOH | DC1 | ! | 1 | A | Q | a | q |
| 2 | STX | DC2 | “ | 2 | B | R | b | r |
| 3 | ETX | DC3 | # | 3 | C | S | c | s |
| 4 | EOT | DC4 | $ | 4 | D | T | d | t |
| 5 | ENQ | NAK | % | 5 | E | U | e | u |
| 6 | ACK | SYN | & | 6 | F | V | f | v |
| 7 | BEL | ETB | ‘ | 7 | G | W | g | w |
| 8 | BS | CAN | ( | 8 | H | X | h | x |
| 9 | HT | EM | ) | 9 | I | Y | i | y |
| A | LF | SUB | * | : | J | Z | j | z |
| B | VT | ESC | + | ; | K | [ | k | { |
| C | FF | FS | , | < | L | \ | l | \| |
| D | CR | GS | - | = | M | ] | m | } |
| E | SO | RS | . | > | N | ^ | n | ~ |
| F | SI | US | / | ? | O | _ | o | DEL |

# Troubleshooting

Before you thinks it is failure...
If the communication functions do not operate properly, please refer to the relevant instructions below before sending for repair.
If the product still does not work properly, then return the product through Omron's Sales.
<Phenomenon> Communication failure/communication error

| Description | Matters to be confirmed | Reference page |
|---|---|---|
| The communication wiring is incorrect. | Carry out wiring correctly. | 1-4 |
| The communication wiring is out. | Connect the wire and tighten it with screws. | - |
| The communication cable is disconnected. | Replace the cable. | - |
| The communication cable is too long. | The total RS-485 cable length is up to a maximum of 500 m. | 1-4 |
| An inappropriate cable is used. | Use a twist pair wire AWG2 with a cable (cross section area: 0.205 $mm^2$) to AWG14 (cross section area: 2.081 $mm^2$). | 1-4 |
| The communication devices that exceed the specified number are connected over the same transmission path. | In case of 1:N connection through a RS-485 cable, the number of Model KM1/KE1 devices that can be connected is: CompoWay/F: up to 31 units; Modbus: up to 99 units (Excluding high-order equipment (e.g. PC)). | 1-4 |
| An end channel is not specified on both ends of the transmission path. | Set and mount a termination resistor, and use a termination resistor of 120 Ω (1/2 W) on the end channel of the Model KM1/KE1 side. | 1-4 |
| Power-supply voltage is not supplied to the main unit. | Apply the power-supply voltage specified. | - |
| Power-supply voltage is not supplied to the communication transformer (Model K3SC etc.). | Apply the power-supply voltage. | - |
| The communication speed and communication method for the main unit, high-order equipment (e.g. PC) and other equipment over the same transmission path do not match. | Set values for the communication speed, protocol, data bit length, stop bit length and vertical parity and make sure that they are matched. | 1-4 |
| The unit no. of the main unit and the unit no. specified by the command frame do not match. | Make sure that the unit no. is matched. | 2-2<br>3-2 |
| The unit no. of the main unit and the unit no. of another equipment over the same transmission path are the same. | Make sure that the unit no. are different. | 1-4 |
| There is an error found in the program of the high-order equipment (e.g. PC). | Use the line monitor to check the command. | - |
| Prior to the receipt of a response from the main unit, the high-order equipment (e.g. PC) detected a failure of no response. | Make the transmission wait time shorter. Make the response wait time for the high-order equipment (e.g. PC) longer. | 1-5 |
| After the transmission of the command for broadcasting and software reset, the high-order equipment (e.g. PC) detected a failure of no response. | No response is returned from the main unit for broadcasting and software reset. | 2-20<br>4-11 |
| Prior to the receipt of a response from the main unit, the high-order equipment (e.g. PC) sent the next command. | Make sure that the response is read out after the command is sent (excluding for broadcasting and software reset). | - |
| After the receipt of a response from the main unit, the interval of time required for the high-order equipment (e.g. PC) sends the next command is short. | Upon receipt of the response, wait at least for 2 ms before sending the next command. | 1-3 |
| The transmission path becomes unstable when the power of the main unit is switched on or the power is disconnected, and the high-order equipment (e.g. PC) reads out this as data. | Initialize the receive buffer for the high-order equipment (e.g. PC) before the first command is sent and after the power of the main unit is disconnected. | - |
| The communication data becomes abnormal under the influence of the surrounding noise. | Reduce the communication speed and retry.<br>Keep the communication cable away from the source of noise generation. Replace the communication cable with a twist pair wire equipped with a shield.<br>Make the communication cable shorter, and do not pull and turn around the redundant part, or do not bend the cable in a loop.<br>To avoid inductive noise, do not install the communication cable in parallel with the power cable. If it is difficult to take measures | - |

| | | |
|---|---|---|
| | against noise, then consider using an optical interface. | |

# Index

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