CC-Link Communication Converter

*COM-MC*02*

[For SRZ]

Instruction Manual

RKC INSTRUMENT INC.

IMR02E46-E2

NOTICE

- This manual assumes that the reader has a fundamental knowledge of the principles of electricity, process control, computer technology and communications.
- The figures, diagrams and numeric values used in this manual are only for explanation purpose.
- RKC is not responsible for any damage or injury that is caused as a result of using this instrument, instrument failure or indirect damage.
- RKC is not responsible for any damage and/or injury resulting from the use of instruments made by imitating this instrument.
- Periodic maintenance is required for safe and proper operation of this instrument. Some components have a limited service life, or characteristics that change over time.
- Every effort has been made to ensure accuracy of all information contained herein. RKC makes no warranty, expressed or implied, with respect to the accuracy of the information. The information in this manual is subject to change without prior notice.
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- CC-Link is a registered trademark of Mitsubishi Electric Co. Ltd.
- Modbus is a registered trademark of Schneider Electric.
- The name of each programmable controller (PLC) means the products of each manufacturer.
- Company names and product names used in this manual are the trademarks or registered trademarks of the respective companies.

Safety Precautions

■ Pictorial Symbols (safety symbols)

Various pictorial symbols are used in this manual to ensure safe use of the product, to protect you and other people from harm, and to prevent damage to property. The symbols are described below.
Be sure you thoroughly understand the meaning of the symbols before reading this manual.

⚠ WARNING : This mark indicates precautions that must be taken if there is danger of electric shock, fire, etc., which could result in loss of life or injury.

⚠ CAUTION : This mark indicates that if these precautions and operating procedures are not taken, damage to the instrument may result.

⚠ : This mark indicates that all precautions should be taken for safe usage.

⚠ WARNING

- To prevent injury to persons, damage to the instrument and the equipment, a suitable external protection device shall be required.
- All wiring must be completed before power is turned on to prevent electric shock, fire or damage to the instrument and the equipment.
- This instrument must be used in accordance with the specifications to prevent fire or damage to the instrument and the equipment.
- This instrument is not intended for use in locations subject to flammable or explosive gases.
- Do not touch high-voltage connections such as power supply terminals, etc. to avoid electric shock.
- RKC is not responsible if this instrument is repaired, modified or disassembled by other than factory-approved personnel. Malfunction may occur and warranty is void under these conditions.

⚠ CAUTION

- This product is intended for use with industrial machines, test and measuring equipment. (It is not designed for use with medical equipment and nuclear energy plant.)
- This is a Class A instrument. In a domestic environment, this instrument may cause radio interference, in which case the user may be required to take additional measures.
- Be sure to provide an appropriate surge control circuit respectively for the following:
  - If input/output or signal lines within the building are longer than 30 meters.
  - If input/output or signal lines leave the building, regardless the length.
- This instrument is designed for installation in an enclosed instrumentation panel. All high-voltage connections such as power supply terminals must be enclosed in the instrumentation panel to avoid electric shock to operating personnel.
- All precautions described in this manual should be taken to avoid damage to the instrument or equipment.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- All wiring must be in accordance with local codes and regulations.
- To prevent instrument damage as a result of failure, protect the power line and the input/output lines from high currents with a suitable overcurrent protection device with adequate breaking capacity such as a fuse, circuit breaker, etc.
- A malfunction in this product may occasionally make control operations impossible or prevent alarm outputs, resulting in a possible hazard. Take appropriate measures in the end use to prevent hazards in the event of malfunction.
- Prevent metal fragments or lead wire scraps from falling inside instrument case to avoid electric shock, fire or malfunction.
- Tighten each terminal screw to the specified torque found in the manual to avoid electric shock, fire or malfunction.
- For proper operation of this instrument, provide adequate ventilation for heat dissipation.
- Do not connect wires to unused terminals as this will interfere with proper operation of the instrument.
- Turn off the power supply before cleaning the instrument.
- Do not use a volatile solvent such as paint thinner to clean the instrument. Deformation or discoloration may occur. Use a soft, dry cloth to remove stains from the instrument.

For Proper Disposal

When disposing of each part used for this instrument, always follows the procedure for disposing of industrial wastes stipulated by the respective local community.

Symbols

■ Pictorial Symbols (safety symbols)

NOTE : This mark indicates important information on installation, handling and operating procedures.

: This mark indicates supplemental information on installation, handling and operating procedures.

: This mark indicates where additional information may be located.

■ Abbreviation symbols

These abbreviations are used in this manual:

Abbreviation symbols	Name	Abbreviation symbols	Name
PV	Measured value	TC (input)	Thermocouple (input)
SV	Set value	RTD (input)	Resistance temperature detector (input)
MV	Manipulated output value	V (input)	Voltage (input)
AT	Autotuning	I (input)	Current (input)
ST	Startup tuning	HBA	Heater break alarm
OUT	Output	CT	Current transformer
DI	Digital input	LBA	Control loop break alarm
DO	Digital output	LBD	LBA deadband

About This Manual

There are two manuals pertaining to this product. Please be sure to read all manuals specific to your application requirements.

The following manuals can be downloaded from the official RKC website:
https://www.rkcinst.co.jp/english/download-center/

Manual	Manual Number	Remarks
COM-MC∗02 [For SRZ] Installation Manual	IMR02E43-E□	This manual is enclosed with instrument. This manual explains the mounting and wiring.
COM-MC∗02 [For SRZ] Instruction Manual	**IMR02E46-E2**	This manual you are reading now. This manual describes mounting, wiring, communication setting, protocol, communication data, troubleshooting and product specification.

Read this manual carefully before operating the instrument. Please place the manual in a convenient location for easy reference.

Contents

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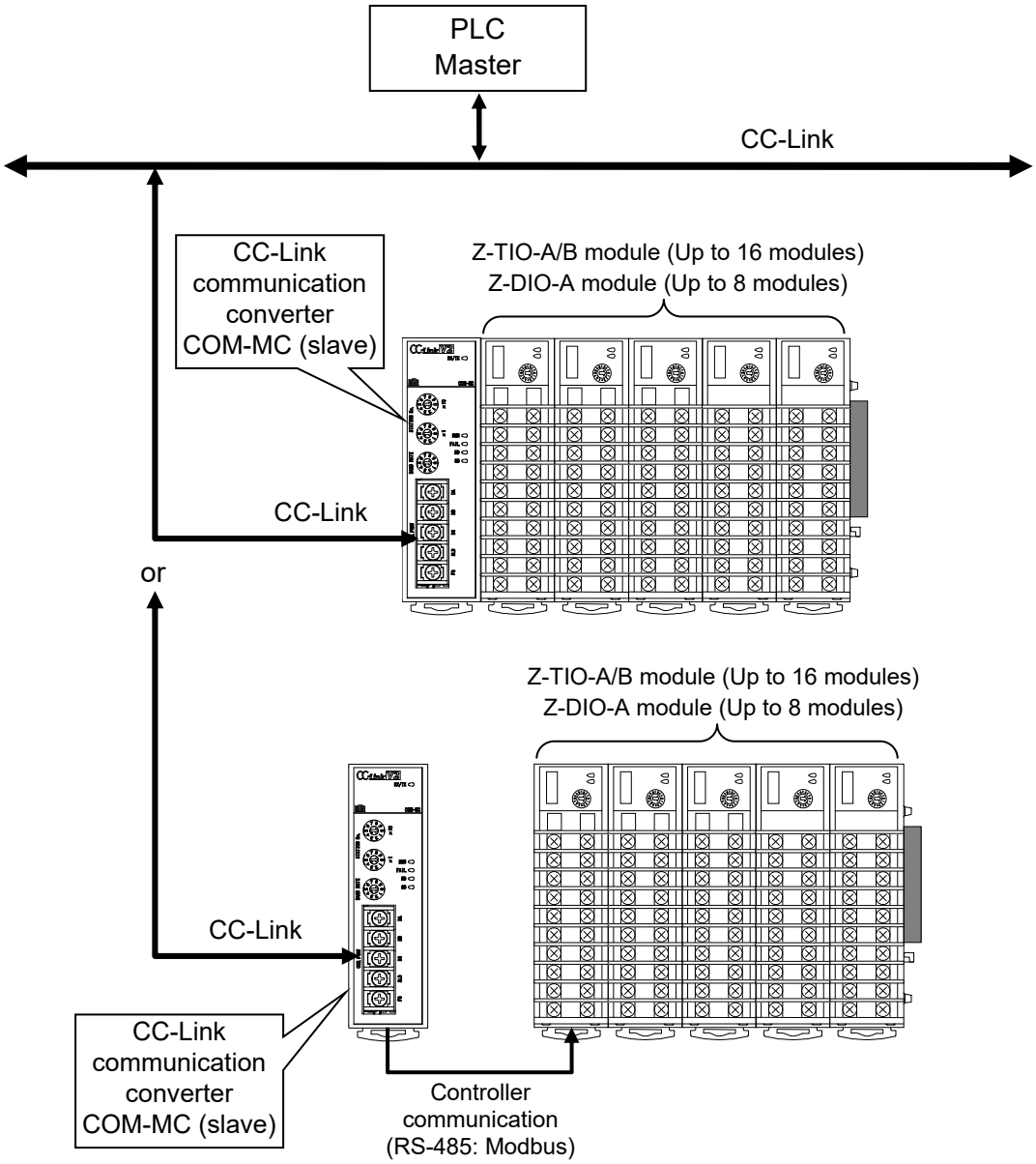
MEMO

1. OUTLINE

CC-Link communication converter COM-MC∗02 [For SRZ] (hereafter called COM-MC) is communication converter to connect the RKC module controller SRZ to a programmable controller (Mitsubishi Electric PLC MELSEC series: hereafter called PLC) for CC-Link.
COM-MC is connected to SRZ function modules (Z-TIO-A/B and Z-DIO-A modules) [hereinafter they may be referred to as controllers] via connectors or screw terminals to build up a multi-loop temperature control system. Up to 24 SRZ function modules can be connected to a single COM-MC.
(Connectable modules: Z-TIO-A/B: 16 max., Z-DIO-A: 8 max.)
In addition, COM-MC is connected to CC-Link as the Remote device station.



Example of System Configuration

☞ For CC-Link, refer to the website of CC-Link Partner Association.
https://www.cc-link.org/

1.1 Checking the Product

Before using this product, check each of the following:

- Model code
- Check that there are no scratches or breakages in external appearance (case, front panel, or terminal, etc.)
- Check that all of the items delivered are complete. (See below)

	Name	Q'TY	Remarks
☐	COM-MC∗02 [For SRZ] Installation Manual (IMR02E43-E☐)	1	Enclosed with instrument
☐	Joint connector cover KSRZ-517A	2	Enclosed with instrument
☐	Power terminal cover KSRZ-518A	1	Enclosed with instrument
☐	COM-MC∗02 [For SRZ] Instruction Manual (IMR02E46-E2)	1	This manual (sold separately) This manual can be downloaded from the official RKC website.

If any of the above are missing, damaged, or if your manual is incomplete, please contact RKC sales office or the agent.

■ Accessories (sold separately)

	Name	Q'TY	Remarks
☐	End plate DEP-01	2	Secures the COM-MC on the DIN rail

1.2 Model Code

Check that the product received is correctly specified by referring to the following model code list:
If the product is not identical to the specifications, please contact RKC sales office or the agent.

COM - MC ∗ 02 - □
(1) (2)

(1) Corresponding to the RKC controller

02: SRZ (Z-TIO-A/B, Z-DIO-A)

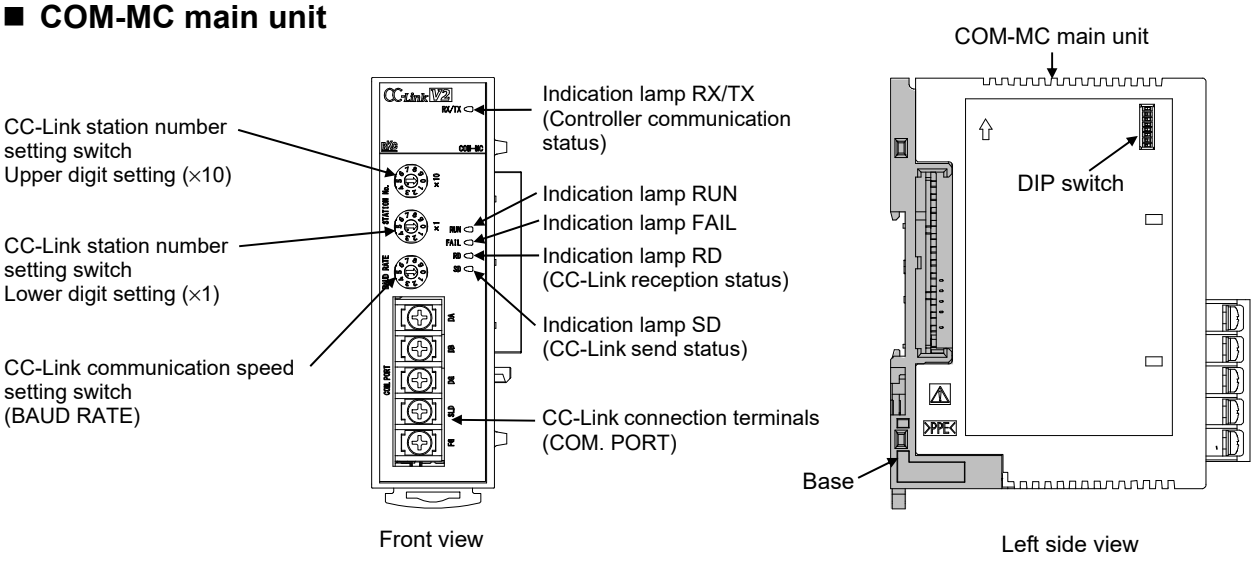
(2) RUN/STOP logic selection

1: 0: RUN
1: STOP

2: 0: STOP
1: RUN

1.3 Parts Description

■ COM-MC main unit



● Indication lamps

RX/TX [Green] (Controller communication status)	During controller communication data send and receive: Green lamp turns on
RUN [Green]	• While in normal state: Green lamp turns on • Self-diagnostic error (Recoverable fault): Green lamp blinks (1000 ms cycle) • Initialization of controller communication: Green lamp blinks (200 ms cycle)
FAIL [Red]	• Self-diagnostic error (Major fault) and CC-Link setting error: Red lamp turns on • CC-Link operation error: Red lamp blinks (2000 ms cycle) • CC-Link setting is changed: Red lamp blinks (800 ms cycle)
RD [Green] (CC-Link reception status)	• While not receiving: Turns off • While receiving: Green lamp turns on
SD [Green] (CC-Link send status)	• While not sending: Turns off • While sending: Green lamp turns on

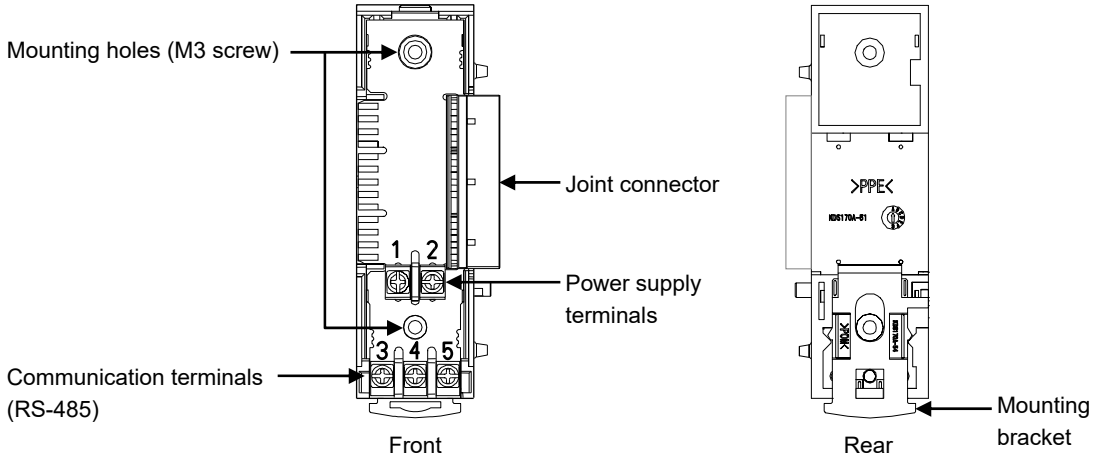
● CC-Link connection terminals

COM. PORT	This is a communication terminal block for connecting a CC-Link master (PLC) and a slave device.

● Switch

CC-Link station number setting switch (×10, ×1)	Set the station number for CC-Link.
CC-Link communication speed setting switch (BAUD RATE)	Set the communication speed for CC-Link.
DIP switch	• Sets communication speed corresponding to controller communication. • Set the number of Occupied station/Extension cyclic for CC-Link.

■ Base



Mounting holes (M3 screw)	Holes for screws to fix the base to a panel, etc. Customer must provide the M3 screws.
Joint connector	Connector to connect to the controller. It is not used when communication terminals (RS-485) [No. 3, 4, 5] are used.
Power supply terminals	These are terminals to supply power to the COM-MC. Terminal number / Signal name 1 / 24 V DC (+) 2 / 24 V DC (–)
Communication terminals (RS-485)	Screw terminal to connect this device to the controller. It is not used when a joint connector is used. Terminal number / Signal name 3 / T/R (A) 4 / T/R (B) 5 / SG
Mounting bracket	Used to fix the COM-MC on DIN rails.

2. HANDLING PROCEDURES

Conduct necessary setting before operation according to the procedure described below.

Mounting

Install the COM-MC.

☞ • See **3. MOUNTING (P. 8)**.
• For SRZ, refer to
Z-TIO Instruction Manual (IMS01T01-E□) and
Z-DIO Instruction Manual (IMS01T03-E□).

Wiring and Connection

Connect power supply wires to the COM-MC, and also connect the COM-MC to the controller and the COM-MC to the PLC, respectively.

☞ • See **4. WIRING (P. 13)**
• For SRZ, refer to
Z-TIO Instruction Manual (IMS01T01-E□) and
Z-DIO Instruction Manual (IMS01T03-E□).

Setting of the CC-Link communication

Configure the CC-Link communication settings for communication over CC-Link.

☞ See **5. COMMUNICATION SETTING (P. 22)**.

Setting of the controller communication

Make setting of the Controller communication to establish communication between the COM-MC and the controller.

☞ • See **5. COMMUNICATION SETTING (P. 22)**.
• For SRZ, refer to
SRZ Instruction Manual (IMS01T04-E□).

PLC and Controller Settings

Set the PLC and controller.

☞ • See **8.3 Use Instruments Setting (P. 99)**.
• For SRZ, refer to
SRZ Instruction Manual (IMS01T04-E□).

Device Assignment

Do assignments of Remote input/output and Remote register.

☞ See **8.4 Device Assignments Example (P. 101)**.

Program Creation

Create the sequence program of PLC.

☞ See **8.5 Sample Program (P. 107)**.

NOTE

To avoid error at operation start-up, COM-MC must be powered on LAST (after the Controller, PLC, etc.).

3. MOUNTING

This chapter describes installation environment, mounting cautions, dimensions and mounting procedures.

> **⚠ WARNING**
>
> To prevent electric shock or instrument failure, always turn off the power before mounting or removing the instrument.

3.1 Mounting Cautions

(1) This instrument is intended to be used under the following environmental conditions.
(IEC 61010-1) [POLLUTION DEGREE 2]

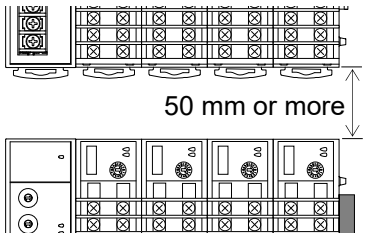
(2) Use this instrument within the following environment conditions:
- Allowable ambient temperature: 0 to 55 °C
- Allowable ambient humidity: 5 to 95 %RH
  (Absolute humidity: MAX. W. C 29 g/m^3 dry air at 101.3 kPa)
- Installation environment conditions: Indoor use
  Altitude up to 2000 m

(3) Avoid the following conditions when selecting the mounting location:
- Rapid changes in ambient temperature which may cause condensation.
- Corrosive or inflammable gases.
- Direct vibration or shock to the main unit.
- Water, oil, chemicals, vapor or steam splashes.
- Excessive dust, salt or iron particles.
- Excessive induction noise, static electricity, magnetic fields or noise.
- Direct air flow from an air conditioner.
- Exposure to direct sunlight.
- Excessive heat accumulation.

(4) Mount this instrument in the panel considering the following conditions:
- Ensure at least 50 mm space on top and bottom of the instrument for maintenance and environmental reasons.
- Do not mount this instrument directly above the equipment that generates large amount of heat (heaters, transformers, semi-conductor functional devices, large-wattage resistors.)
- If the ambient temperature rises above 55 °C, cool this instrument with a forced air fan, cooler, etc. Cooled air should not blow directly on this instrument.
- In order to improve safety and the immunity to withstand noise, mount this instrument as far away as possible from high voltage equipment, power lines, and rotating machinery.

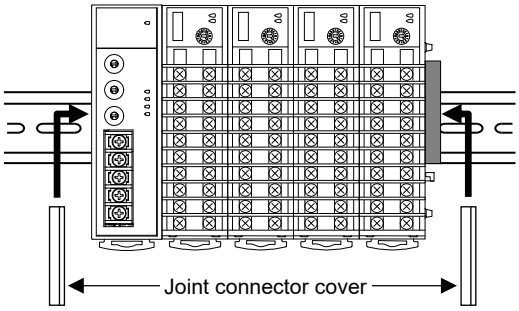
  High voltage equipment: Do not mount within the same panel.
  Power lines: Separate at least 200 mm
  Rotating machinery: Separate as far as possible

- Space required between each instrument vertically:
  To install/uninstall the main unit of the COM-MC on/from the Base unit, the main unit needs to be slightly inclined and thus requires at least 50 mm clearance above and below it.

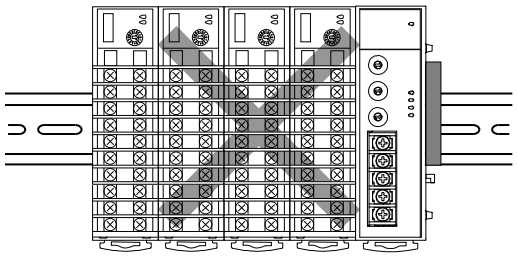


- It is recommended to use a joint connector cover on the connector on both sides of the mounted COM-MC for protection of connectors.

  When mounting COM-MC, leave space at both ends for covers.

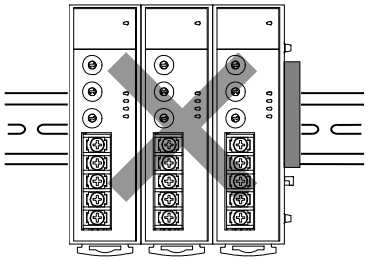


- When connecting SRZ function modules (Z-TIO-A/B and Z-DIO-A) to the COM-MC, ensure that the SRZ function modules are on the left side of the COM-MC (as seen from the front).
  COM-ME, COM-ML, and Z-COM modules cannot be connected to the COM-MC module.



  Even when function modules are not connected to the COM-MC (wired via the communication terminal), follow the above instructions when joining the function modules.

- Do not connect the COM-MC module to the others. Otherwise the communication may not be established properly.

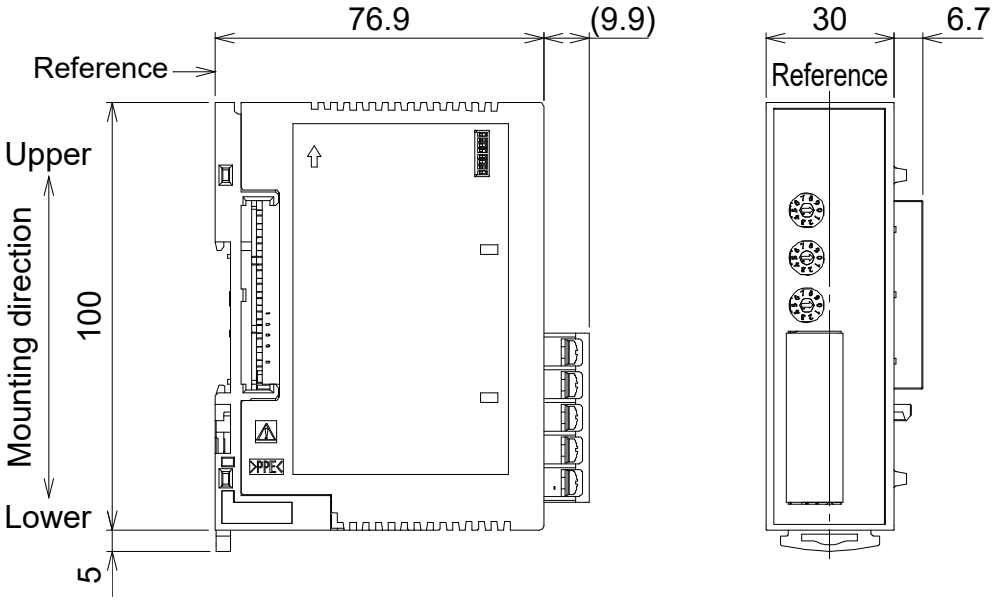


- To firmly fix the COM-MC, use end plates (DEP-01) sold separately on both sides of the mounted COM-MC. When mounting COM-MC, leave space at both ends for end plates.

(5) In case this instrument is connected to a supply by means of a permanent connection, a switch or circuit-breaker shall be included in the installation. This shall be in close proximity to the equipment and within easy reach of the operator. It shall be marked as the disconnecting device for the equipment.

3.2 Dimensions

(Unit: mm)



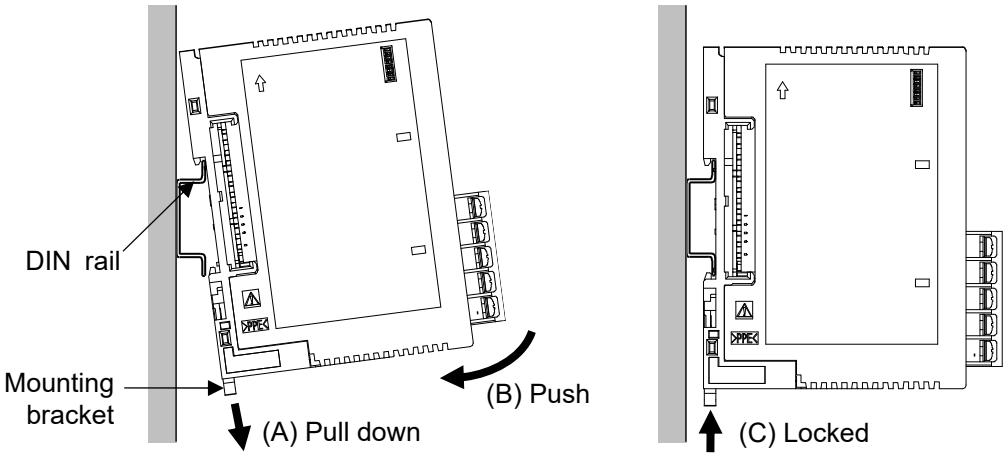
Allowable tilt angle is ± 90°, back and force, right and left from the reference.

3.3 DIN Rail Mounting

■ Mounting procedures

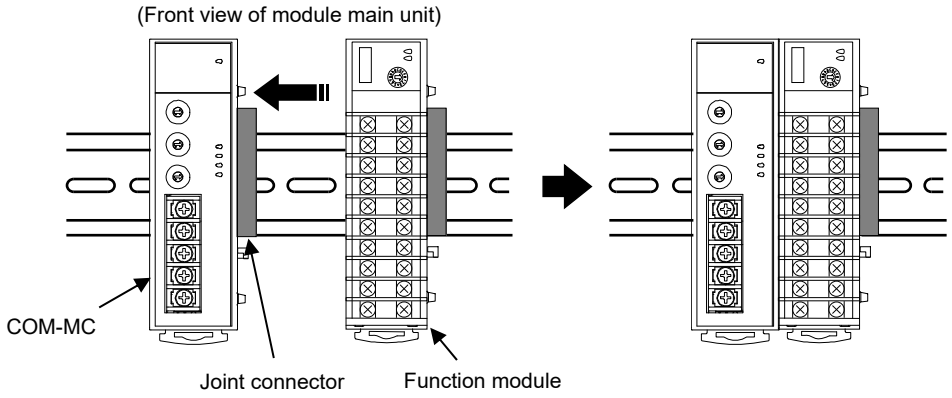
1. Pull down the mounting bracket at the bottom of the base (A). Attach the hooks on the top of the base to the DIN rail and push the lower section into place on the DIN rail (B).

2. Slide the mounting bracket up to secure the COM-MC module to the DIN rail (C).

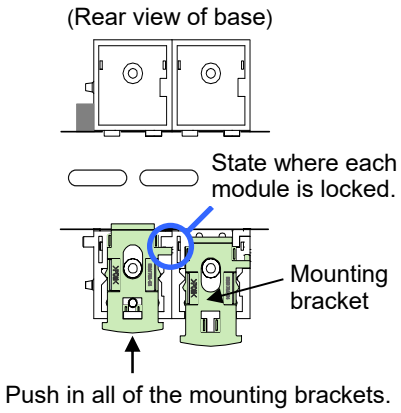


■ Module joining procedures

1. Mount the function modules on the DIN rail. Slide the modules until the modules are closely joined together and the joint connectors are securely connected.



2. Push in the mounting brackets to lock the modules together and fix to the DIN rail.



After module joining, install a plastic cover on the connector on both sides of the mounted modules for protection of connectors. (See P. 9)

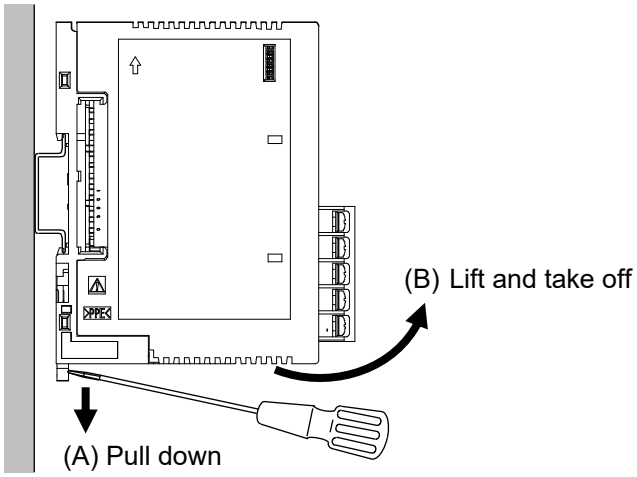
To firmly fix the modules, use end plates (DEP-01) sold separately on both sides of the mounted modules. When mounting modules, leave space at both ends for end plates.

■ Removing procedures

1. Turn the power OFF.

2. Remove the wiring.

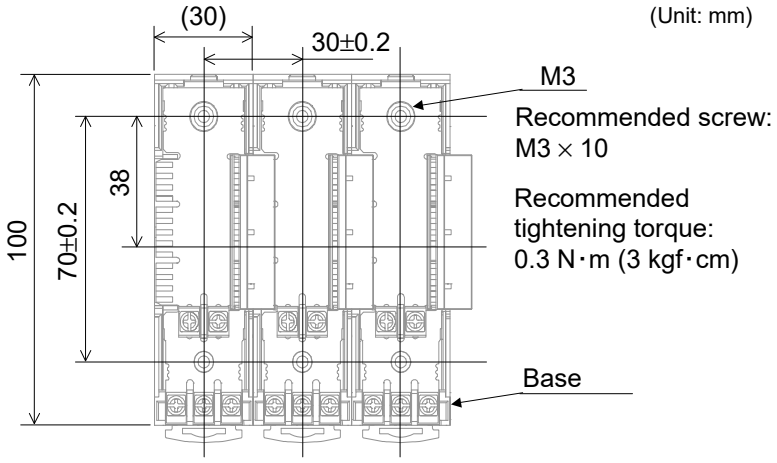
3. Pull down a mounting bracket with a slotted screwdriver (A).
Lift the COM-MC module from bottom, and take it off (B).



3.4 Panel Mounting

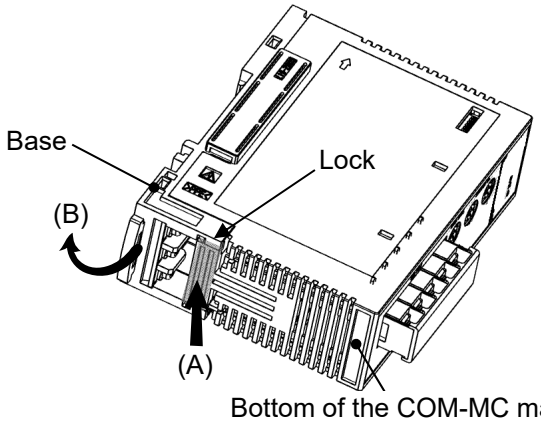
■ Mounting procedures

1. See the mounting dimensions below when selecting the location.



Mounting dimensions

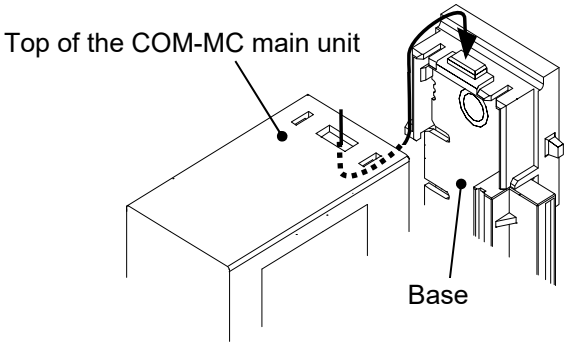
2. Remove the base from the COM-MC main unit (B) while the lock is pressed (A).



Bottom of the COM-MC main unit

3. Fix the base to its mounting position using M3 screws. Customer must provide the screws.

4. Mount the COM-MC main unit on the base.



4. WIRING

This chapter describes wiring cautions, terminal configuration and connections.

4.1 Wiring Cautions

⚠ WARNING

To prevent electric shock or instrument failure, do not turn on the power until all wiring is completed. Make sure that the wiring is correct before applying power to the instrument.

- To avoid noise induction, keep communication signal wire away from instrument power line, load lines and power lines of other electric equipment.
- If there is electrical noise in the vicinity of the instrument that could affect operation, use a noise filter.
  - Shorten the distance between the twisted power supply wire pitches to achieve the most effective noise reduction.
  - Always install the noise filter on a grounded panel. Minimize the wiring distance between the noise filter output and the instrument power supply terminals to achieve the most effective noise reduction.
  - Do not connect fuses or switches to the noise filter output wiring as this will reduce the effectiveness of the noise filter.
- Power supply wiring must be twisted and have a low voltage drop.
- For an instrument with 24 V power supply input, supply power from a “SELV” circuit defined as IEC 60950-1.
- A suitable power supply should be considered in end-use equipment. The power supply must be in compliance with a limited-energy circuit (maximum available current of 5.6 A).
- Supply the power to only one of the joined modules or COM-MC. When power is supplied to any one of the joined modules or COM-MC, all of the joined modules and COM-MC will receive power.
- Select the power capacity which is appropriate for the total power consumption of all joined modules (including COM-MC) and the initial current surge when the power is turned on.

  Power consumption (at maximum load): 45 mA max. (at 24 V DC)
  Rush current: 15 A or less

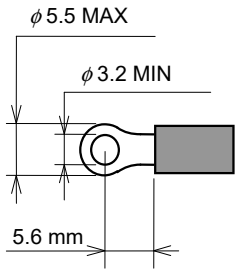
- When connecting the wiring to the terminals, use the recommended solderless terminals. Only these recommended solderless terminals can be used due to the insulation between the terminals.

  Screw Size: Power supply terminals and Communication terminals:
  M3 × 7 (with 5.8 × 5.8 square washer)
  CC-Link connection terminals: M3 × 6

  Recommended tightening torque:
  Power supply terminals and Communication terminals:
  0.4 N·m (4 kgf·cm)
  CC-Link connection terminals: 0.49 N·m (5 kgf·cm)

  Applicable wire:
  Power supply terminals and Communication terminals:
  Solid/twisted wire of 0.25 to 1.65 mm^2
  CC-Link connection terminals: AWG20

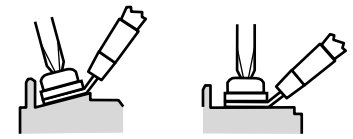
  Recommended solderless terminal:
  Manufactured by J.S.T MFG CO., LTD.
  Circular terminal with isolation V1.25–MS3



- Make sure that during field wiring parts of conductors cannot come into contact with adjacent conductive parts.

- When connecting the COM-MC and the controller, ensure that the wiring of the CC-Link does not interfere with the controller wiring.

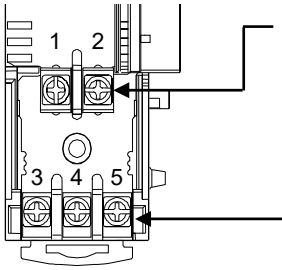
When tightening a screw of the function modules, make sure to fit the screwdriver properly into the screw head mounted tilted or flat as shown in the right figure. Tightening the screw with excessive torque may damage the screw thread.



4.2 Terminal Configuration

■ Power supply terminals and Communication terminals

The terminal layout of COM-MC (base) is as follows.



Power supply terminals

No.	Description
1	24 V DC (+)
2	24 V DC (–)

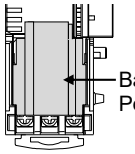
Communication terminals (RS-485)
These terminals are used for connecting to the controller through the controller communication.

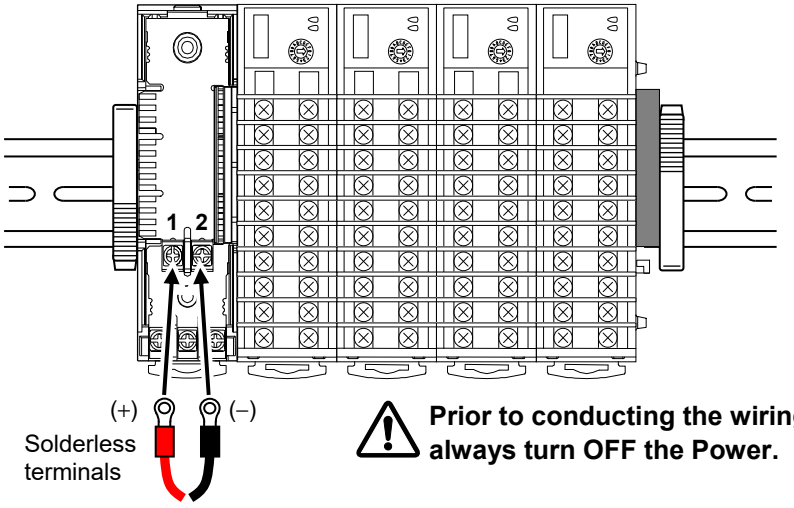
No.	Description
3	T/R (A)
4	T/R (B)
5	SG

● Wiring method

As an example, the method of connecting to the power supply terminals (terminal numbers 1 and 2) is shown below.

1. Turn the power OFF.
2. Remove COM-MC main unit from the base.
3. Remove the Power supply terminal cover on the base.
4. Attach the solderless terminals to the power terminals with a Phillips head screwdriver. When attaching the terminals, make sure that the polarity (+ and –) is correct.





Prior to conducting the wiring, always turn OFF the Power.

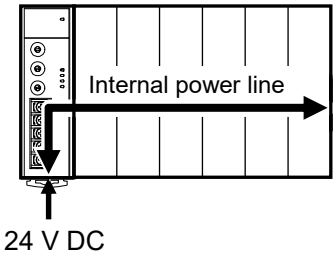
5. Attach the Power supply terminal cover on the terminal and return the COM-MC main unit to the base. This completes the wiring work.

Connections to the communication terminals (terminal numbers 3 to 5) are made in the same way.

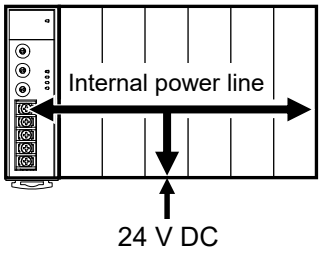
When using the COM-MC connected to function modules, the power supply wiring is connected to any one of the modules. Power is supplied from the module with the power wiring to the other modules.

[Wiring example]

When supplied a power supply to a COM-MC



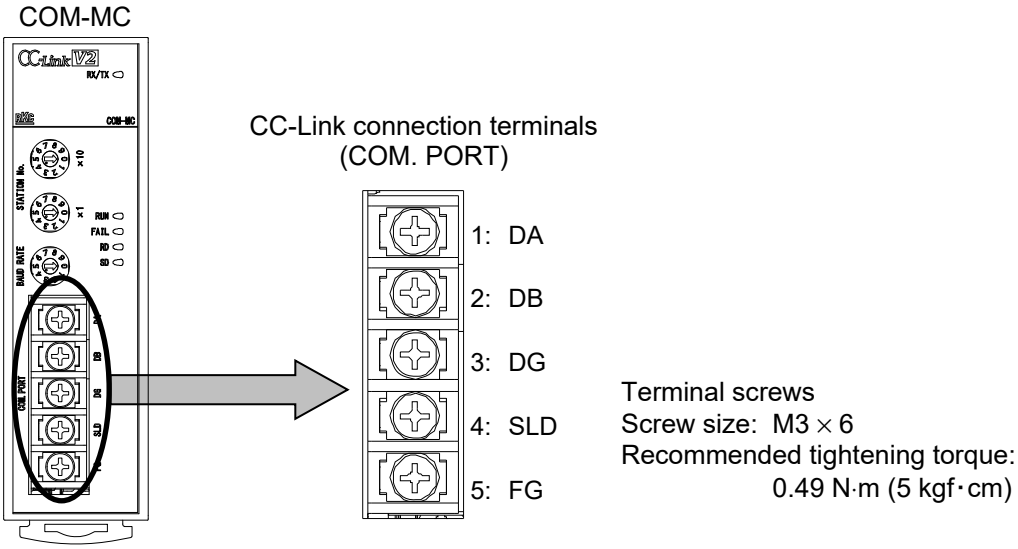
When supplied a power supply to a function module



4.3 Connection to CC-Link

Connect COM-MC to CC-Link.

■ Terminal layout



■ Terminal number and signal details

Terminal No.	Signal name	Symbol	Cable color
1	Data A	DA	Blue
2	Data B	DB	White
3	Data ground	DG	Yellow
4	Shield (Grounding wire)	SLD	—
5	Frame ground	FG	—

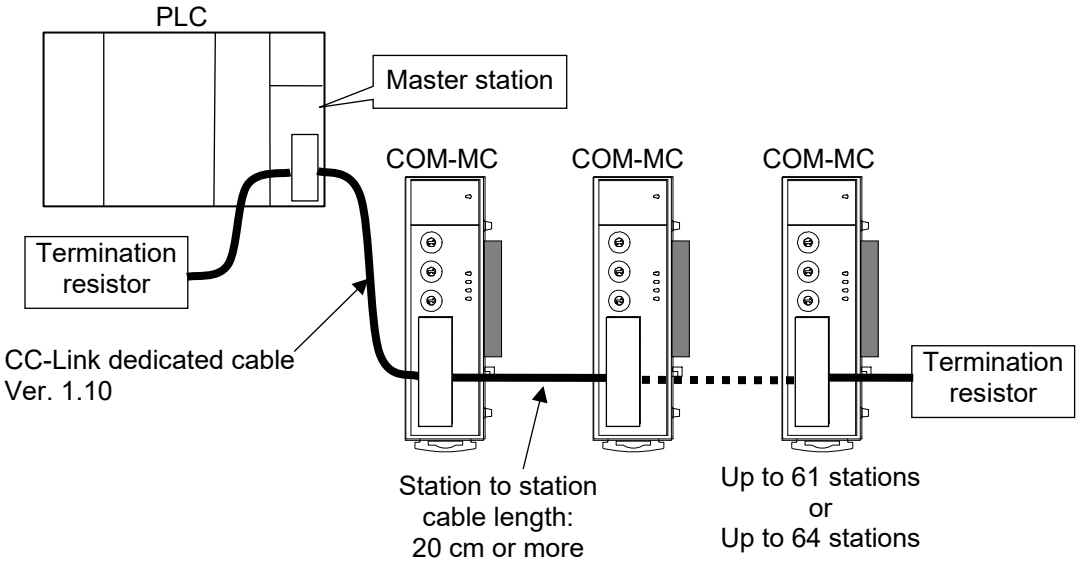
NOTE

- **The CC-Link connecting terminal cannot do on-line installation or dismount for terminal block of dismount impossibility. The device cannot be replaced unless the link is set off-line. In addition, FG (frame ground) terminal of terminal number 5 is FG in a CC-Link function, and it is not FG of instrument all.**
- **Ground both ends of the shield wire on the CC-Link dedicated cable Ver. 1.10 via the SLD or FG terminal of each module. In addition, the SLD terminal is internally connected with the FG terminal.**
- **Do not ground the instrument together with other equipment. In addition, use grounding wires with a cross section of 2.0 mm^2 or more. (Ground resistance: 100 ohm or less)**

☞ For cable specifications, connection method and vendor, refer to the website of CC-Link Partner Association.
https://www.cc-link.org/

■ Connection example

The PLC (Master station) and COM-MC make multi-drop connection in CC-Link dedicated cable Ver. 1.10.

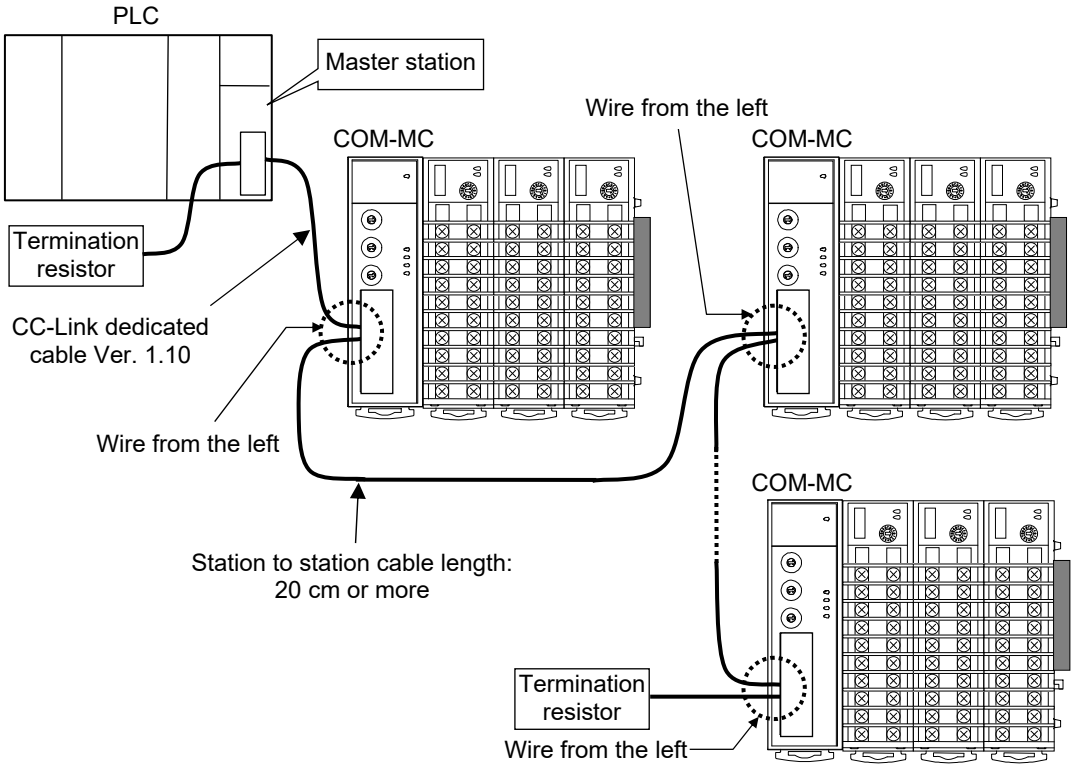


● Communication speed and cable length (Use the CC-Link dedicated cable Ver. 1.10)

Communication speed	Station to station cable length	Maximum transmitter distance (maximum length of network)
10 Mbps	20 cm or more	100 m
5 Mbps		160 m
2.5 Mbps		400 m
625 kbps		900 m
156 kbps		1200 m

☞ For communication speed and cable length, refer to the “CC-Link Cable Wiring Manual” of CC-Link Partner Association.

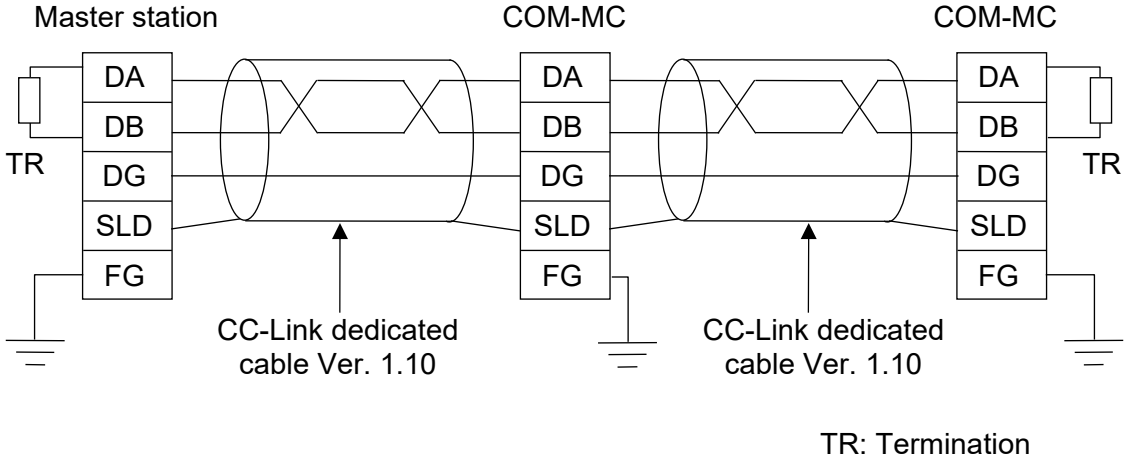
When connecting the COM-MC and the Controller (SRZ), wiring from the left side of the COM-MC is recommended. Attempting to wire from the right side of the COM-MC may interfere with the controller wiring.



■ Connection diagram

NOTE

Always connect a termination resistor between the DA and DB terminals of the module to be located at the far end.
Termination resistor: 110 Ω ± 5 % 1/2 W



The CC-Link dedicated cable Ver. 1.10 is provided by the customer.

4.4 Connection to Controller

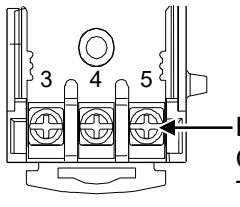
Connect the COM-MC and controllers as shown below.
The communication cable and termination resistor(s) must be provided by the customer.

☞ Refer to the instruction manual of the relevant model for the details of the size of the solderless terminal and how to conduct transition wiring.

- **SRZ Instruction Manual (IMS01T04-E□)**
- **Z-TIO Instruction Manual (IMS01T01-E□)**

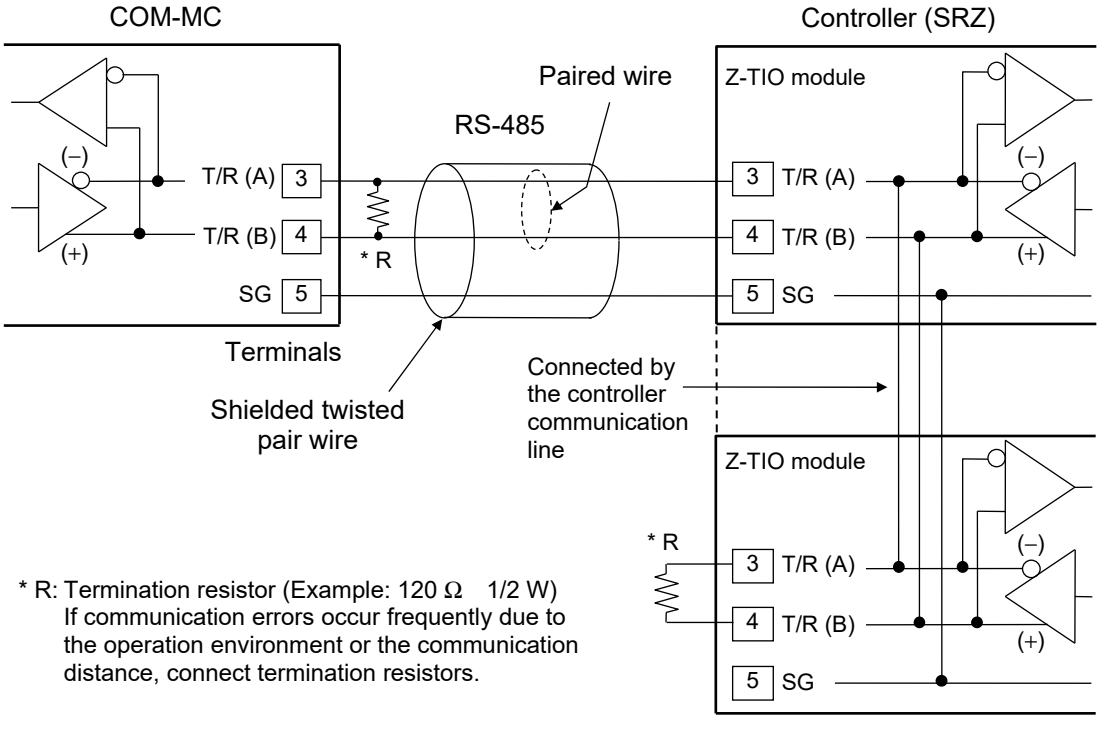
☞ When trying to join the COM-MC and the controller, see **3. MOUNTING (P. 8)**.
If necessary, connect a terminating resistor by referring to the connection example below.

■ Communication terminal number and signal details



Terminal No.	Signal name	Symbol
3	Send data/Receive data	T/R (A)
4	Send data/Receive data	T/R (B)
5	Signal ground	SG

■ Wiring example

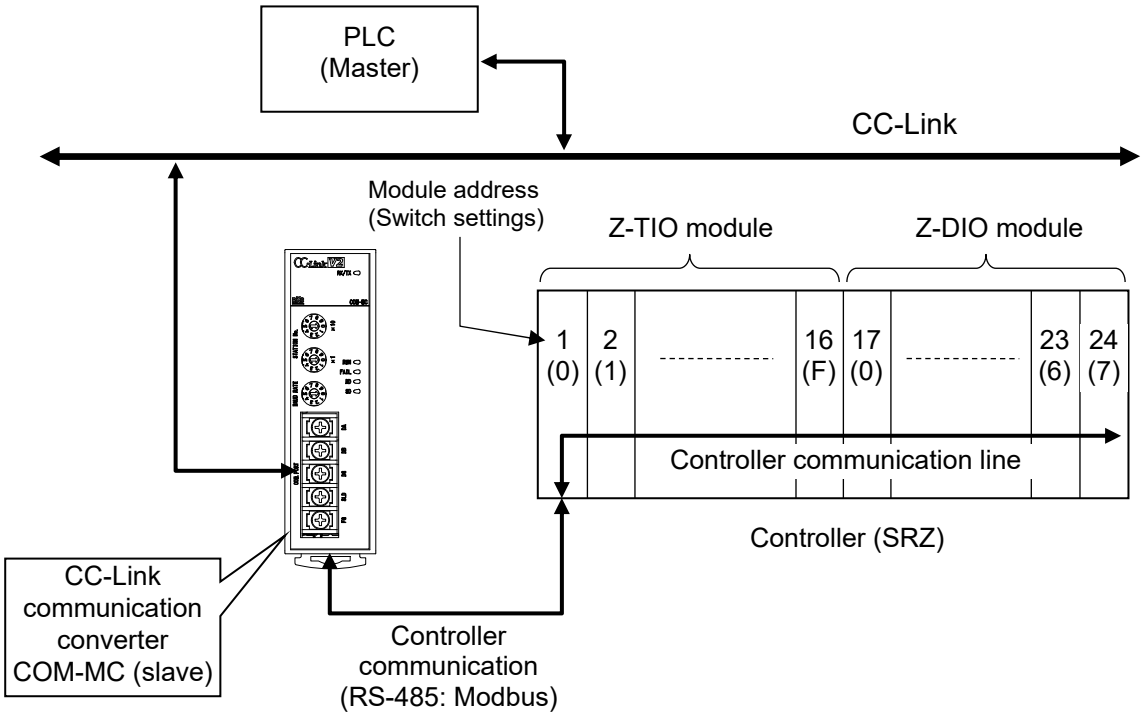


* R: Termination resistor (Example: 120 Ω 1/2 W)
If communication errors occur frequently due to the operation environment or the communication distance, connect termination resistors.

Up to 16 Z-TIO modules can be connected.

The maximum number of SRZ connected is 16 for Z-TIO modules and 8 for Z-DIO modules.
(Connectable module type to COM-MC: Z-TIO-A, Z-TIO-B, Z-DIO-A)

- **Wiring example**



5. COMMUNICATION SETTING

⚠ WARNING

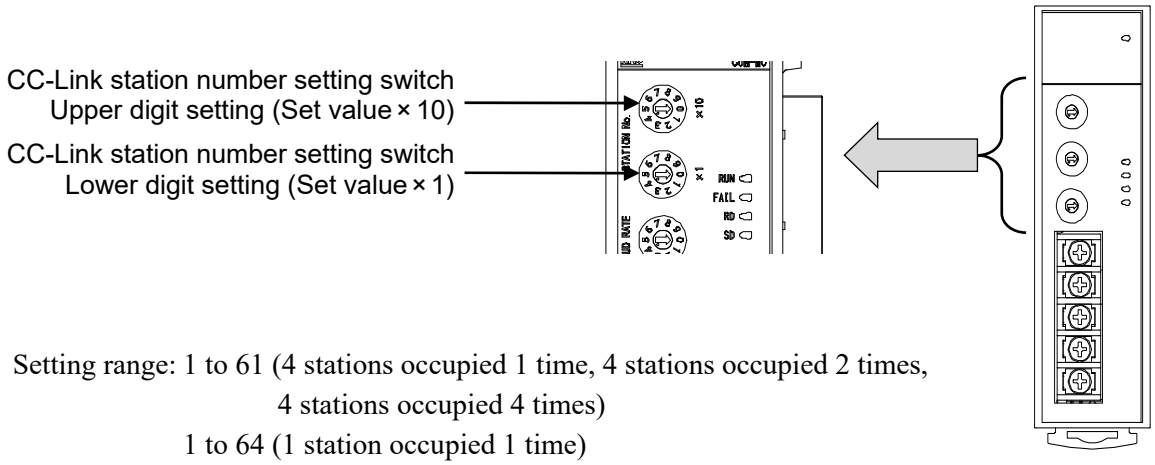
- To prevent electric shock or instrument failure, always turn off the power before setting the switch.
- To prevent electric shock or instrument failure, never touch any section other than those instructed in this manual.

5.1 CC-Link Station Number Setting

Set the station number of CC-Link using a small blade screwdriver.

NOTE

The setting will not be reflected if it is changed while the instrument is powered on. The FAIL lamp flashes to indicate it. The FAIL lamp also flashes when a set value outside the setting range is entered.
To activate the setting, turn off the power once and turn it back on again.



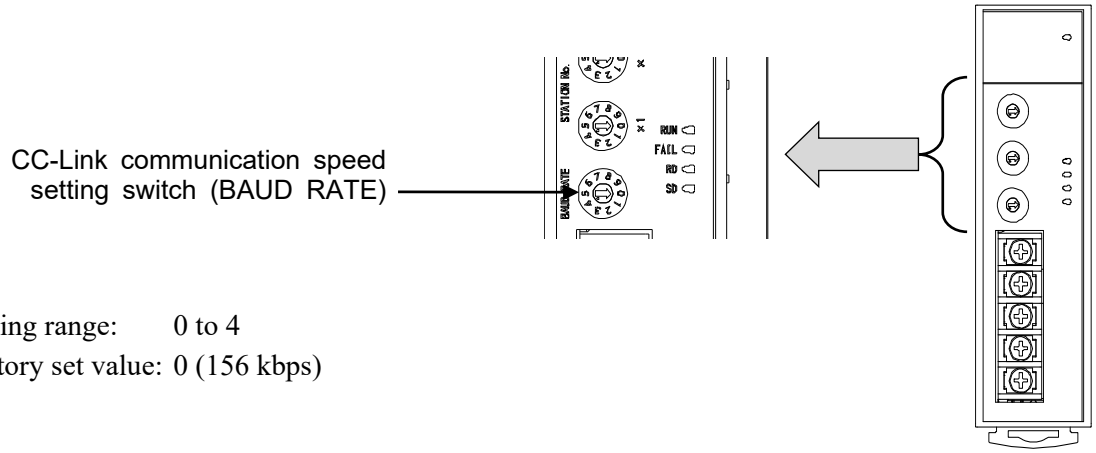
Setting range: 1 to 61 (4 stations occupied 1 time, 4 stations occupied 2 times, 4 stations occupied 4 times)
1 to 64 (1 station occupied 1 time)
Factory set value: 0

5.2 CC-Link Communication Speed Setting

Set the communication speed of CC-Link using a small blade screwdriver.

NOTE

The setting will not be reflected if it is changed while the instrument is powered on. The FAIL lamp flashes to indicate it. The FAIL lamp also flashes when a set value outside the setting range is entered.
To activate the setting, turn off the power once and turn it back on again.



Setting range: 0 to 4
Factory set value: 0 (156 kbps)

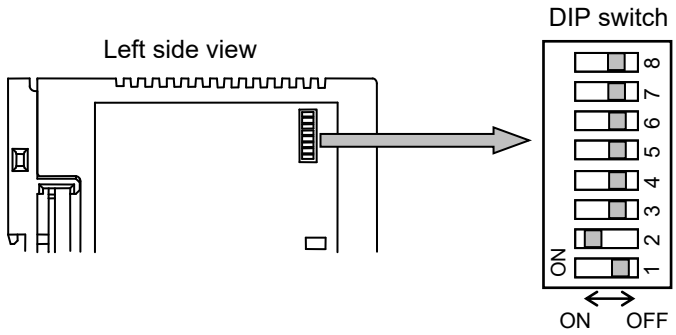
- **Communication speed and maximum transmitter distance [Use the CC-Link dedicated cable Ver. 1.10]**

Communication speed setting	Communication speed	Maximum transmitter distance
0	156 kbps	1200 m
1	625 kbps	900 m
2	2.5 Mbps	400 m
3	5 Mbps	160 m
4	10 Mbps	100 m
5 to 9	**Do not set this one**	

☞ For communication speed and cable length, refer to the “CC-Link Cable Wiring Manual” of CC-Link Partner Association.

5.3 Occupied Stations/Extended Cyclic and Controller Communication Speed Setting

DIP switches are used to set the number of CC-Link occupied stations/extended cyclic and controller communication speed.



1	2	Controller communication speed	
OFF	OFF	38400 bps	
ON	OFF	9600 bps	
OFF	ON	19200 bps	← Factory set value
ON	ON	57600 bps *	

* When the switch is set to 57600 bps, the controller communication with the SRZ is not possible.

3	4	5	Number of occupied stations/extended cyclic setting	Maximum connections		
				Z-TIO	Z-DIO	
OFF	OFF	OFF	4 stations occupied 1 time (8 channels assignment)	2 instruments	1 instruments	← Factory set value
ON	OFF	OFF	4 stations occupied 1 time (16 channels assignment)	4 instruments	2 instruments	
OFF	ON	OFF	4 stations occupied 2 times (16 channels assignment)	4 instruments	2 instruments	
ON	ON	OFF	4 stations occupied 2 times (32 channels assignment)	8 instruments	4 instruments	
OFF	OFF	ON	1 station occupied 1 time (1 channel assignment)	1 instrument	1 instrument	
ON	OFF	ON	1 station occupied 1 time (2 channels assignment)	1 instrument	1 instrument	
OFF	ON	ON	4 stations occupied 4 times (32 channels assignment)	8 instruments	4 instruments	
ON	ON	ON	4 stations occupied 4 times (64 channels assignment)	16 instruments	8 instruments	

NOTE

DIP switches No. 6, No. 7 and No. 8 are set to OFF at the time of shipment. Do not change the setting. Improper setting may result in unavailability of proper communication.

6	7	8		
OFF	OFF	OFF	**Fixed (Do not change)**	← Factory set value

CC-Link version varies according to the specification of Occupied station/Extended cyclic of the COM-MC. Select CC-Link version of PLC by setting the following CC-Link specifications:

- 1 station occupied 1 time/4 stations occupied 1 time: CC-Link Ver. 1.10
- 4 stations occupied 2 times/4 stations occupied 4 times: CC-Link Ver. 2.00

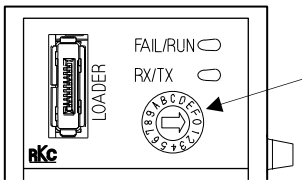
5.4 SRZ Function Module Setting

■ Address setting

Set the address of the function modules. When using two or more function modules, set the desired module address to each module. For this setting, use a small blade screwdriver.
There are two ways for a recognition method of the module address: Continuous setting and Free setting.
At the time of shipment, it is preset to "Free setting" Set the module address referring to **5.7 Module Address Recognition Method (P. 29)**.

NOTE

To avoid problems or malfunction, do not duplicate a module address on the same communication line. (The module addresses of the COM-MC and function modules must not overlap with each other)



Address setting switch
Setting range: 0 to F [0 to 15: Decimal number]
Factory set value: 0

Module address number of each module:

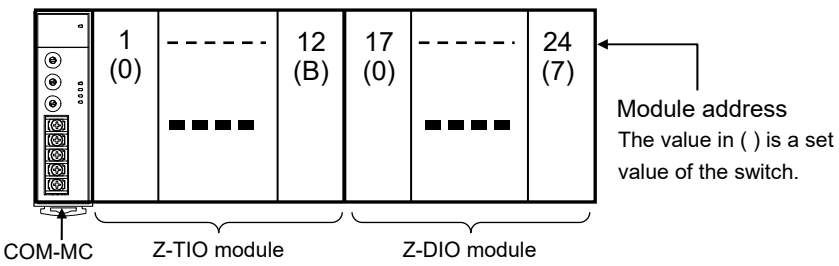
	Modbus
Z-TIO module	1 to 16 (Decimal number) The value obtained by adding "1" to the set address corresponds to the address used for the actual program.
Z-DIO module	17 to 32 (Decimal number) The value obtained by adding "17" to the set address corresponds to the address used for the actual program.

The maximum number of function modules (Z-TIO-A/B and Z-DIO-A) connectable to one COM-MC is described below.

- Z-TIO-A/B module (Up to 16 modules)
- Z-DIO-A module (Up to 8 modules)

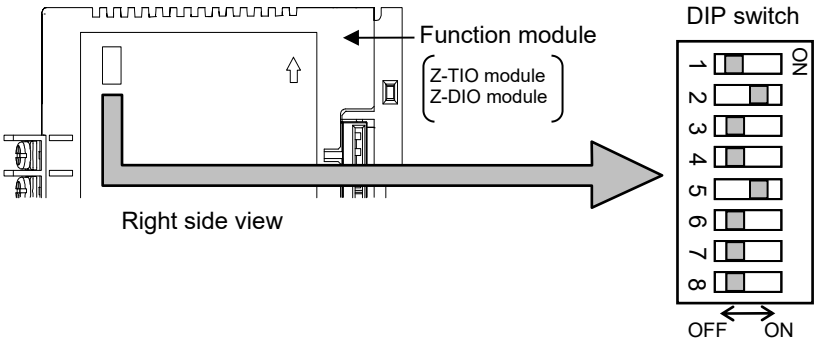
For relation of the module address and channel number, see **5.5 Temperature Control Channel of Z-TIO Module (P. 27)** and **5.6 Digital Input/Output Channel of Z-DIO Module (P. 28)**.

Address setting example of function module (Z-TIO: 12, Z-DIO: 8)



■ Protocol selections and communication speed setting

Use the DIP switch on the right side of module to select communication speed, data bit, configuration and protocol. The data changes become valid when the power is turned on again or when changed to RUN/STOP.



NOTE

Use the same setting (communication speed, data bit configuration, and communication protocol) for the function modules that are connected on the same line as the COM-MC. However, when the communication speed of the COM-MC is 57600 bps, the controller communication to function modules is not available.

[Controller communication conditions]

- Module address (controller address):
  Z-TIO-A/B module: 1 to 16
  Z-DIO-A module: 17 to 32
- Communication protocol: Modbus-RTU
- Communication speed: 9600 bps, 19200 bps, 38400 bps
- Data bit configuration: Data 8 bits, non parity, Stop 1 bit

☞ For the setting of communication speed, data bit configuration, and communication protocol of the function module, refer to the **SRZ Instruction Manual (IMS01T04-E□)**.

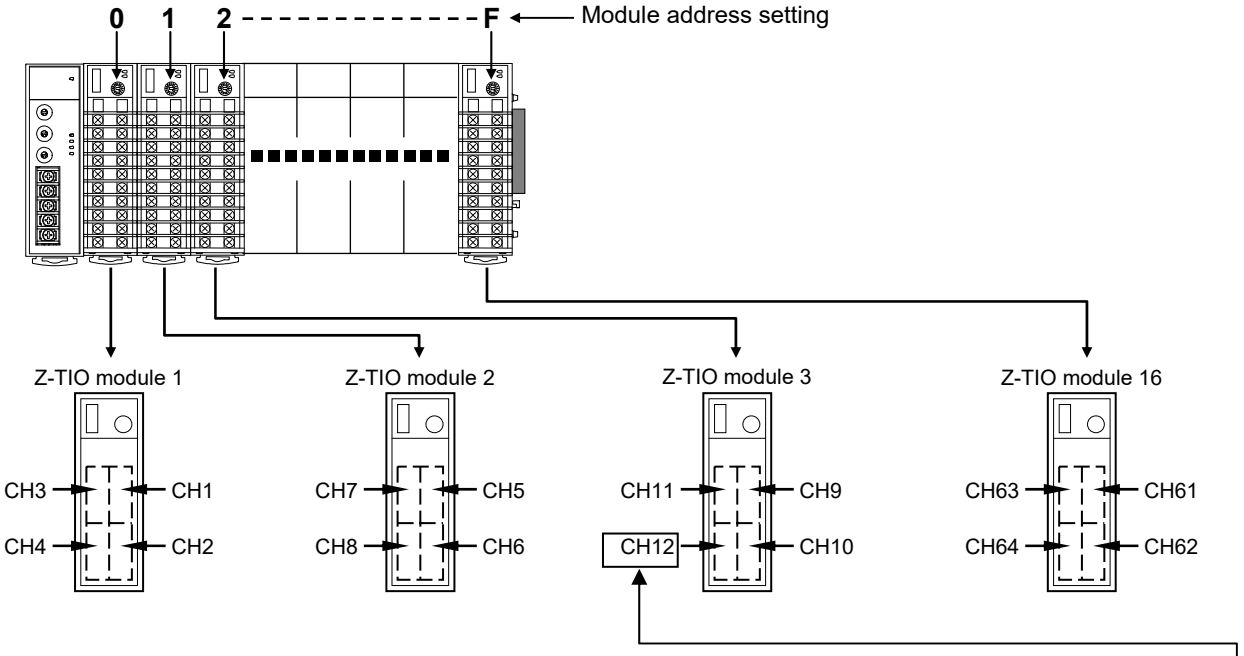
5.5 Temperature Control Channel of Z-TIO Module

Setting the Z-TIO module address determines the temperature control channel number used for communication. To each Z-TIO module address, the relevant temperature control channel is assigned. Each temperature control channel number can be calculated from the following equation.

Temperature control channel number of communication =
[Module address setting [a]] × [Maximum channel number of the function module [b]]
+ [Channel number in a module]

[a] When the setting is A to F, it is a decimal number.
[b] For the Z-TIO module, it is calculated by "4."

Example: When 16 Z-TIO modules (4-channel type) are joined



- Z-TIO module 3: The temperature control channel number used for communication of channel 4
  $2 \times 4 + 4 = 12$

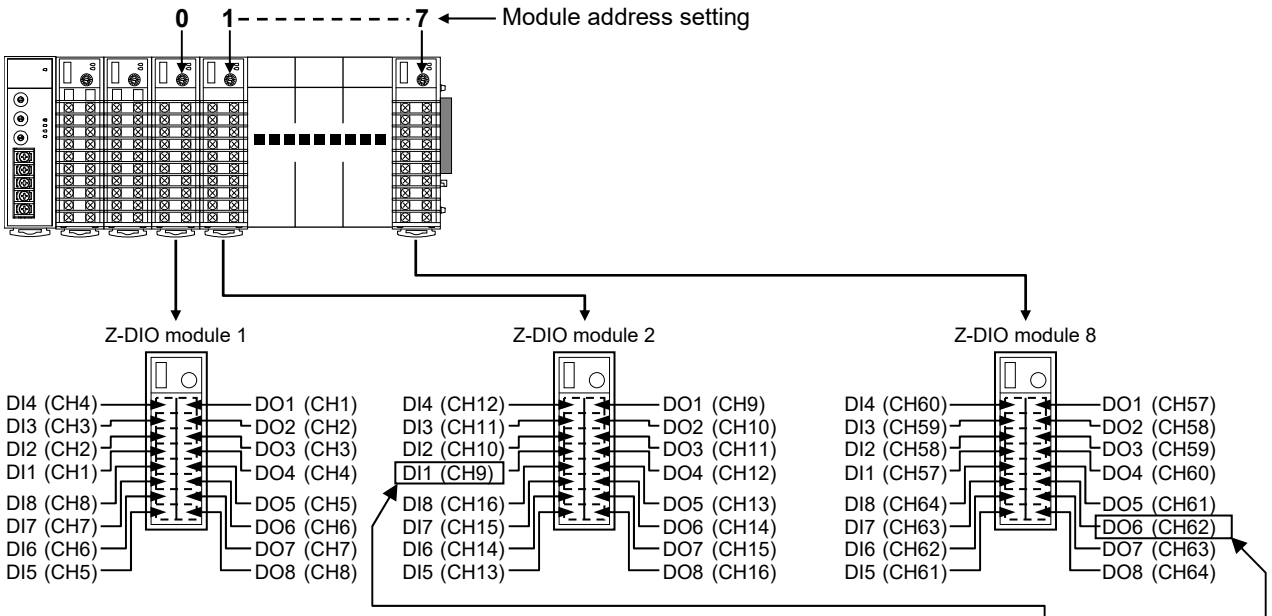
5.6 Digital Input/Output Channel of Z-DIO Module

Setting the Z-DIO module address determines the digital input/output channel number of SRZ unit. To each Z-DIO module address, the relevant digital input/output channel is assigned. Each digital input/output channel can be calculated from the following equation.

Digital input/output channel number =
[Module address setting [a]] × [Maximum channel number of the function module [b]]
+ [Input (or output) channel number in a module]

[a] When the setting is A to F, it is a decimal number.
[b] For the Z-DIO module, it is calculated by "8."

Example: When 8 Z-DIO modules are joined



- Digital input channel number of digital input (DI) channel 1 of Z-DIO module 2
  $1 \times 8 + 1 = 9$
- Digital output channel number of digital output (DO) channel 6 of Z-DIO module 8
  $7 \times 8 + 6 = 62$

5.7 Module Address Recognition Method

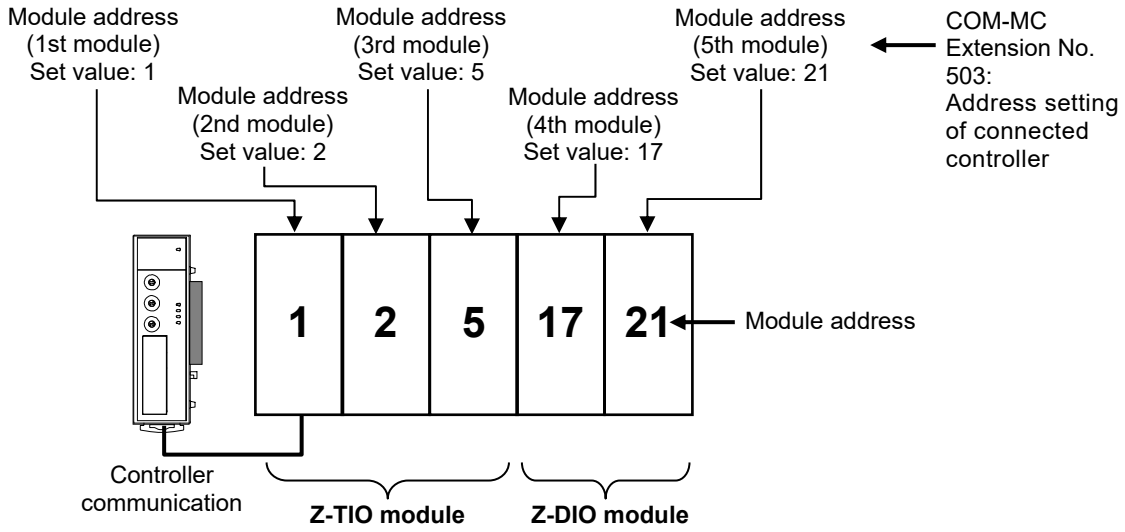
When conducting controller communication, set the module address on each function module, and set the module address (Extension No. 503) of the function module connected to the COM-MC on the COM-MC. There are two ways for a recognition method of the module address (Continuous setting and Free setting) that can be selected at "Action mode selection" of the COM-MC communication data (Extension No. 500). At the time of shipment, it is preset to "Free setting."
If the function module address has been changed, the COM-MC needs to recognize the module address again. Use COM-MC communication data (Extension No. 505) "Automatic acquisition of controller address" to ensure that the COM-MC recognizes the module address again.

📖 In this manual the address of the SRZ function module is generally described as "module address." You might find some addresses are described as "controller address," but these are both the same.

5.7.1 Free setting

The COM-MC performs communication check from Module address (1st module) up to the maximum number of connections in sequence. The COM-MC conducts communication with recognized function modules (Z-TIO and Z-DIO modules).
The module address of Z-TIO and Z-DIO modules can be set flexibly in the following range: Z-TIO: 1 to 16, Z-DIO: 17 to 32.
The module address is required on both the function module and the communication data (Extension No. 503) "Address setting of connected controller" of the COM-MC. The factory set values of Extension number 503 (Address setting of connected controllers) are assigned sequentially from 1 to 31, starting with "1" for the Module address 1.

Three Z-TIO and two Z-DIO modules are connected (Maximum connections: Z-TIO: 16 modules, Z-DIO: 8 modules)



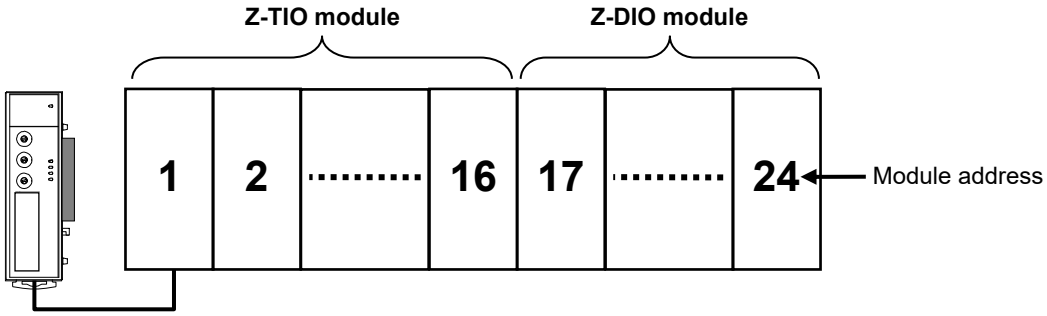
Even if the total connection is less than 24, the device checks the communication up to Module address 32 and conducts communication with all the recognized function modules.

📖 The above example shows the modules connected via screw terminals, but this also applies to the case when the modules are connected via connectors.

5.7.2 Continuous setting

The COM-MC scans the devices for connection of the communication in the order from Module address (1st module) function module (Z-TIO and Z-DIO module). If there is a function module that cannot be recognized, then the COM-MC finishes checking the connection. The COM-MC conducts communication with recognized function modules only.
The module address of Z-TIO and Z-DIO modules can be set in the following range: Z-TIO: 1 to 16, Z-DIO: 17 to 32.
The module address is required on both the function module and the communication data (Extension No. 503) "Address setting of connected controller" of the COM-MC. The factory set values of Extension number 503 (Address setting of connected controllers) are assigned sequentially from 1 to 31, starting with "1" for the Module address 1.

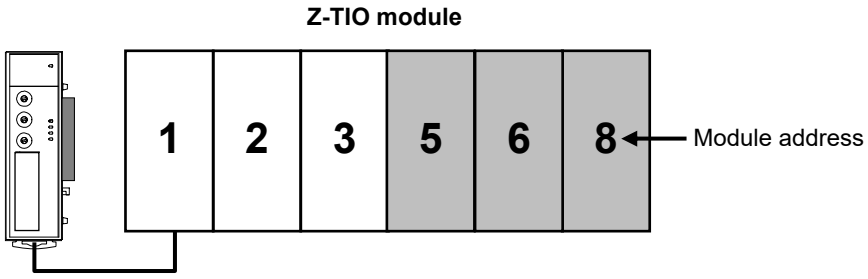
When module addresses of Z-TIO/Z-DIO are set continuously from 1 to 24



Module address has been continuously set from 1 to 24. The COM-MC recognizes 24 function modules and conducts communication with them.

When Z-TIO module addresses are set discontinuously

If controller module addresses 4 and 7 are empty:



Because the COM-MC could not recognize the Z-TIO module at Module address 4, it terminates checking the connection.
The COM-MC communicates only with recognized Z-TIO modules with module address 1 to 3.

The COM-MC will not communicate with Z-TIO modules with module address larger than 3.

5.7.3 Module address auto acquisition

In such cases as shown below, conduct Module address automatic acquisition.

- The COM-MC was powered on, but communication with function modules was not established.
- Module address of function module was changed.
- Module address set at the Extension No. 503 “Address setting of connected controller” of the COM-MC communication data as changed.

■ Procedure of Controller address automatic acquisition

Module address automatic acquisition of function module is implemented at the Extension No. 505 “Automatic acquisition of controller address” of the COM-MC communication data.

NOTE
Implement Module address automatic acquisition while the system is off.

1. Set the Extension No. 505 “Automatic acquisition of controller address” to “1: Execute the automatic acquisition.”
2. Turn off the power of the COM-MC.
3. Turn on the power of the COM-MC.
4. Automatic acquisition is completed when the set value of Extension No. 505 “Automatic acquisition of controller address” changes from “1: Execute the automatic acquisition” to “0: Do not execute the automatic acquisition.”
5. Ensure that the communication is established with the function module(s) connected to the COM-MC.

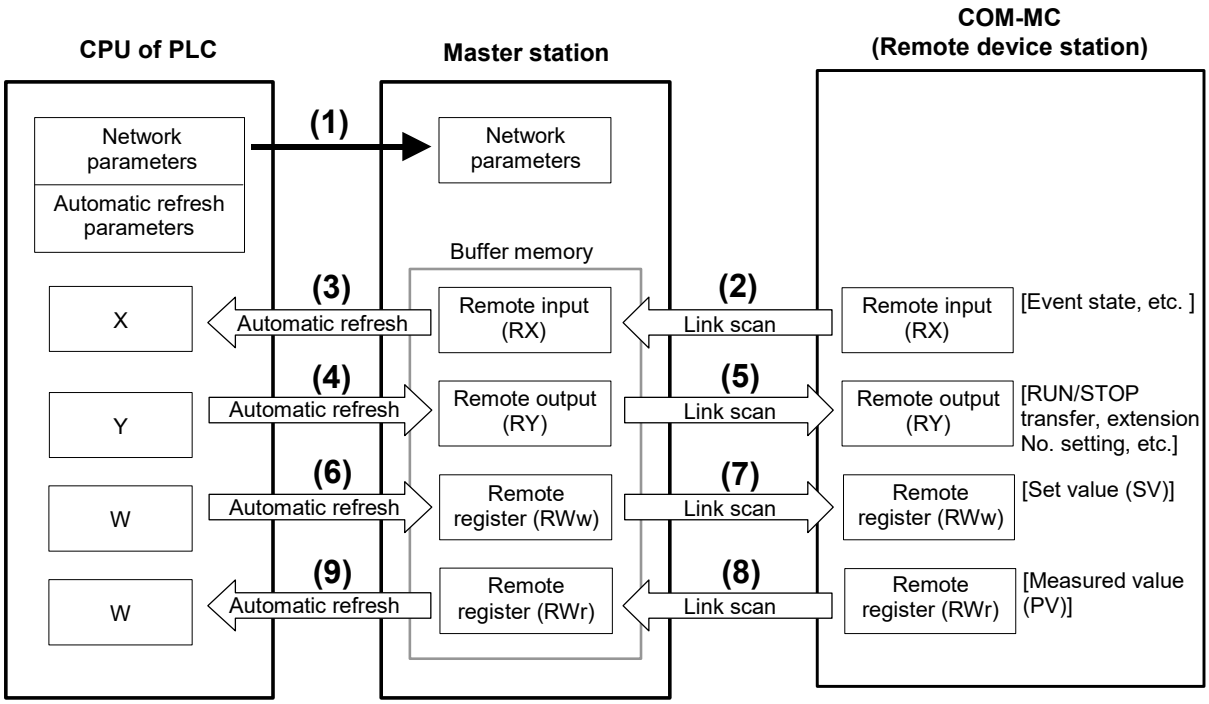
After the module address of function module are automatically acquired, they are stored in Extension No. 503 (Address Setting of Connected Controllers) in ascending address order.

6. CC-Link COMMUNICATION

6.1 Communication Between Master Station and COM-MC (Remote Device Station)

The COM-MC which is a remote device station can process Remote input (RX), Remote output (RY) and Remote registers (RWw and RWr).

■ Outline of communication between master station and COM-MC (Remote device station)



(1) When the PLC system is powered on, the network parameters in the PLC CPU are transferred to the master station, and the CC-Link system automatically starts up. [Data link startup]

(2) The Remote input RX of a COM-MC (Remote device station) is stored automatically (for each link scan) in the master station's Remote input RX buffer memory. [Remote input]

(3) The input status stored in the Remote input RX buffer memory is stored in the CPU device set with the automatic refresh parameters.

(4) The ON/OFF data of the CPU device set with the automatic refresh parameters is stored in the Remote output RY buffer memory. [Remote output]

(5) Remote output RY is automatically set to ON/OFF (for each link scan) according to the output status stored in the Remote output RY buffer memory.

(6) The transmission data of the CPU device set with the automatic refresh parameters is stored in the Remote register RWw buffer memory.

(7) The data stored in the Remote register RWw buffer memory is automatically sent to the Remote register RWw of COM-MC (Remote device station).

[Writing to the Remote register RWw]

(8) The Remote register RWr data of a COM-MC (Remote device station) is automatically stored in the Remote register RWr buffer memory of the master station.

(9) The Remote register RWr data of a COM-MC (Remote device station) stored in the Remote register RWr buffer memory is stored in the CPU device set with the automatic refresh parameters.

[Reading from the Remote register (RWr)]

With the master station (PLC) set to the STOP state, neither the Remote output (RY) nor data write to the Remote register (RWw) is reflected to the COM-MC.

For details of the communication, refer to the **Instruction manual for PLC**.

6.2 CC-Link Flag Operation

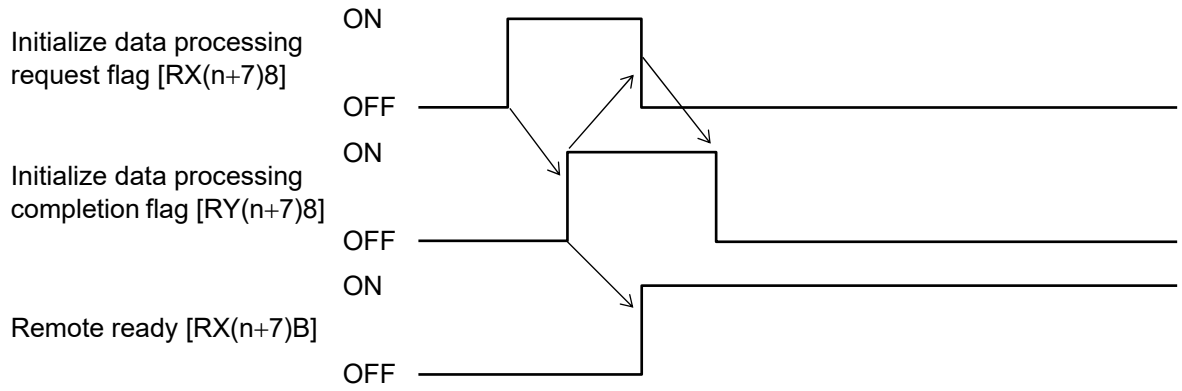
Remote input/output and Remote register flag operations are as follows.

[Example] When the Occupied station/Extended cyclic of COM-MC is set to 4 station occupied 1 time.

■ Initialize request processing at power on

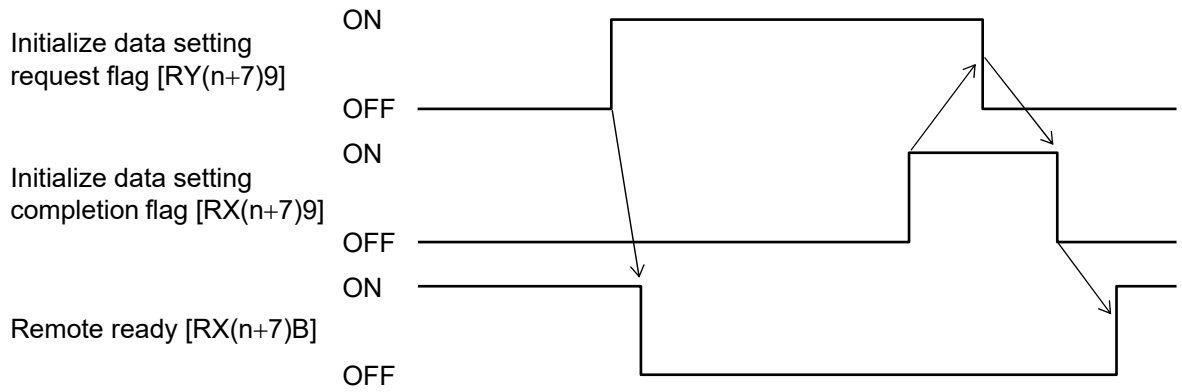
● Initialize processing request from Remote device station (COM-MC)

If the COM-MC is initialized at power on, the Initialize data processing request flag [RX(n+7)8] is turned on. Thus, turn on the Initialize data processing completion flag [RY(n+7)8]. When COM-MC becomes a ready state, a Remote ready [RX(n+7)B] is turned on.



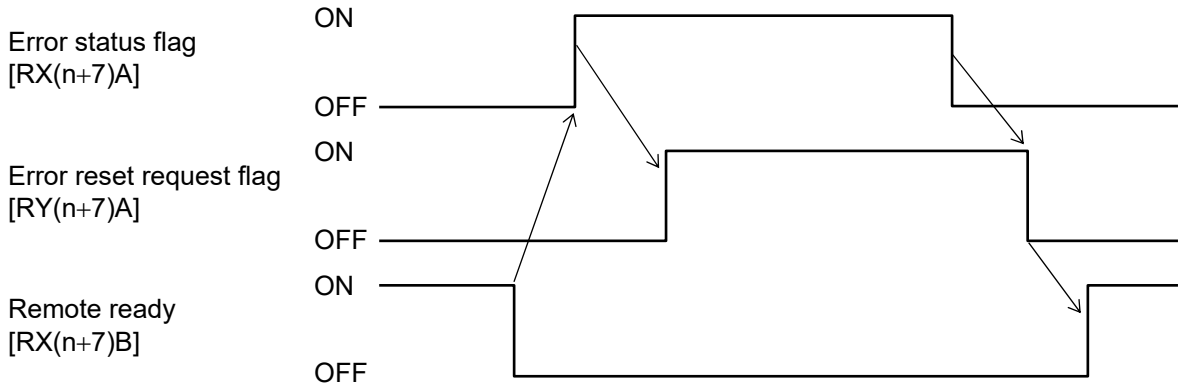
● Initialize processing request from Master station (PLC)

This is a COM-MC initialize setting request. As there is no initialize data specifically, no processing is required.



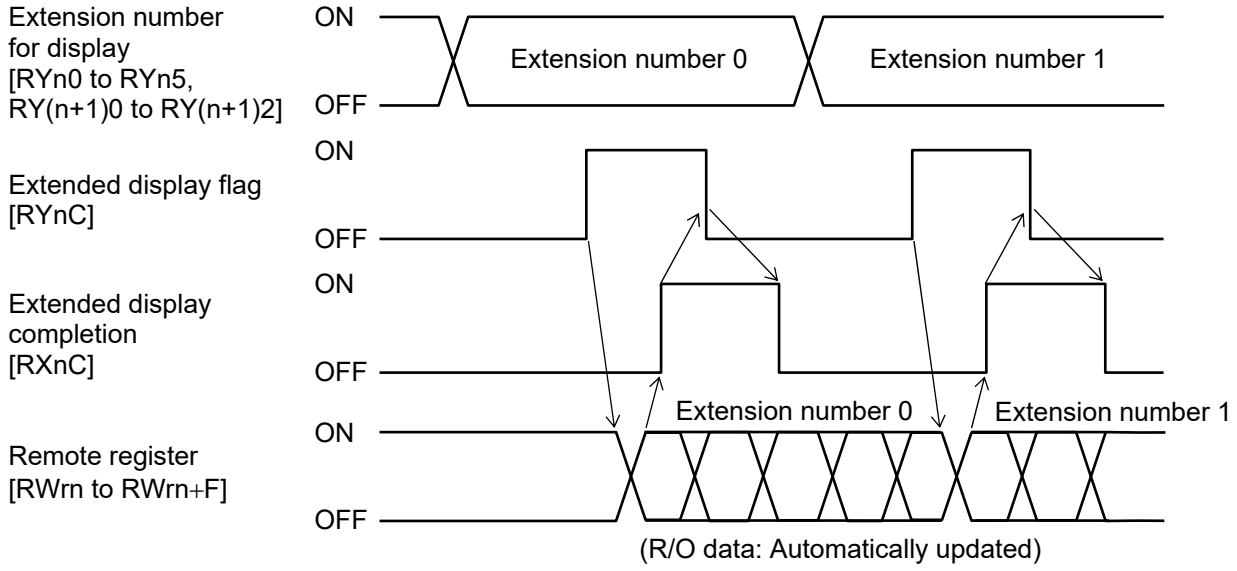
■ Error flag/Error reset processing

If the Error reset request flag [RY(n+7)A] is turned on while the Error status flag [RX(n+7)A] is turned on, the Error status flag history is cleared and the flag [RX(n+7)A] turns off.



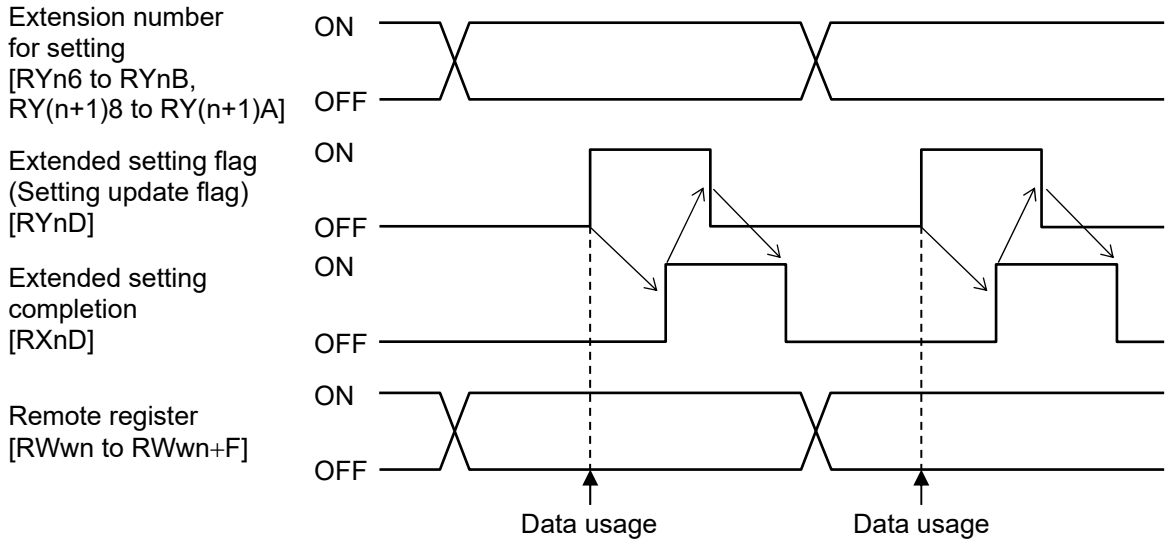
■ Extension number for display selection processing

The content of the extended display remote register is selected.
After the Extension number for display [RYn0 to RYn5, RY(n+1)0 to RY(n+1)2] is set, turn on the Extended display flag [RYnC]. After the data in the Remote register [RWrn to RWrn+F] is displayed, check that Extended display completion [RXnC] is turned on and then turn off the Extended display flag [RYnC]. If the extended display flag is turned off, the extended display completion is turned off.



■ Extension number for setting selection processing

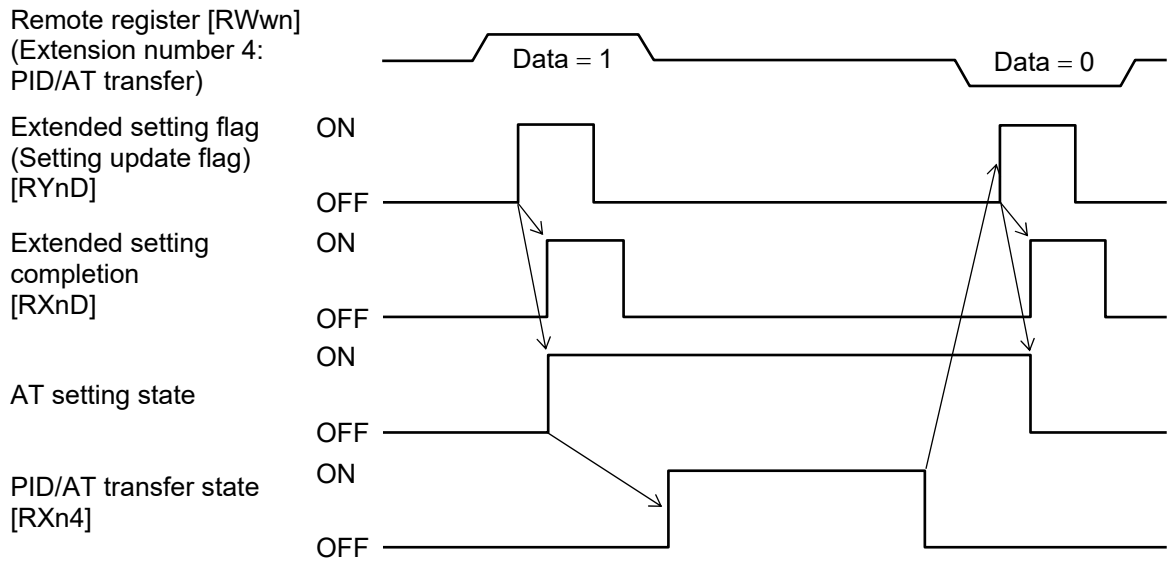
The content of the extended setting remote register is selected and the set value is changed.
After the Extension number for setting [RYn6 to RYnB, RY(n+1)8 to RY(n+1)A] is set, turn on the Extended setting flag (Setting update flag) [RYnD]. After the content of the Remote register [RWwn to RWwn+F] is set, check that Extended setting completion [RXnD] is turned on and then turn off the Extended setting flag (Setting update flag) [RYnD]. If the Extended setting flag (Setting update flag) [RYnD] is turned off, the Extended setting completion [RXnD] is turned off.



Regardless of the number of Occupied station and the Extended cyclic, the above processing is also necessary if the Set value (SV) assigned to the Remote register (RWw) as a fixed value is changed.

■ AT start procedure

Instructs AT execution.



6.3 Processing of Numeric Data Values

Numeric data values used via communication with the PLC and processed by COM-MC include those with and without decimal points and also those with minus signs.

● For numeric data value without decimal point

If there is no decimal point, the value is processed as it is.
In parameters which only have ON or OFF status, 1 = ON, 0 = OFF.

[Example]

A signal wire for temperature input is disconnected and the burnout state occurs.

→ Read value corresponding to extension number 63 (comprehensive event state):
1 (Hexadecimal number: 0001H)

● For numeric data value with decimal point

The decimal point is omitted.

[Example]

When the Measured value (PV) of controller (module address 1) is 120.5 °C

→ Read value of Remote register (RWrn) [Measured value (PV) of module address 1]:
1205 (Hexadecimal number: 04B5H)

→ Read value corresponding to extension number 0 [Measured value (PV)]:
1205 (Hexadecimal number: 04B5H)

● For numeric data value with minus sign

The value is expressed as a 2's complement value which is obtained by subtracting the minus value from the hexadecimal number 10000H.

[Example]

When the Measured value (PV) of controller (module address 1) is –2.5 °C

→ Read value of Remote register (RWrn) [Measured value (PV) of module address 1]:
Hexadecimal number: FFE7H (10000H – 25 = 10000H – 19H = FFE7H)

→ Read value corresponding to extension number 0 [Measured value (PV)]:
Hexadecimal number: FFE7H (10000H – 25 = 10000H – 19H = FFE7H)


Read data of unused item becomes 0.


Any attempt to write to an unused item is not processed as an error.
Data cannot be written into an unused item.

6.4 Module Address and Number of CC-Link Assignment Channels

■ Z-TIO module

- Module address setting range: 1 to 16
- The number of assignment channel per module (when connected to COM-MC): 4 channels
- The number of the maximum available modules per the number of the CC-Link assignment channel
  1 station occupied 1 time (1 channel assignment or 2 channels assignment): 1 module
  4 stations occupied 1 time (8 channels assignment): 2 modules
  4 stations occupied 1 time and 4 stations occupied 2 times (16 channels assignment): 4 modules
  4 stations occupied 2 times and 4 stations occupied 4 times (32 channels assignment): 8 modules
  4 stations occupied 4 times (64 channels assignment): 16 modules
- The following table shows the relation between the channel number (when set with the number continuous from module address 1) and the number of the available CC-Link assignment channel against each module address.

	Module Address		1	2	3	4	5	6	7	8	·····	16
	Channel number		CH1 CH2 CH3 CH4	CH5 CH6 CH7 CH8	CH9 CH10 CH11 CH12	CH13 CH14 CH15 CH16	CH17 CH18 CH19 CH20	CH21 CH22 CH23 CH24	CH25 CH26 CH27 CH28	CH29 CH30 CH31 CH32	·····	CH61 CH62 CH63 CH64
Number of CC-Link assignment channels	4 stations occupied 1 time	8 channels assignment	A		—	—	—	—	—	—	—	—
		16 channels assignment	A, B		B		—	—	—	—	—	—
	4 stations occupied 2 times	16 channels assignment					—	—	—	—	—	—
		32 channels assignment	A, B, C		B, C		C				—	—
	4 stations occupied 4 times	32 channels assignment									—	—
		64 channels assignment	A, B, C, D		B, C, D		C, D				D	

A: Range of number of CC-Link assignment channels that can be set when the module address setting is 1 and 2 (up to CH8).
B: Range of number of CC-Link assignment channels that can be set when the module address setting is 1 to 4 (up to CH16).
C: Range of number of CC-Link assignment channels that can be set when the module address setting is 1 to 8 (up to CH32).
D: Range of number of CC-Link assignment channels that can be set when the module address setting is 1 to 16 (up to CH64).

Example: When three Z-TIO modules (4-channel type) are joined together and the module addresses are 1, 2 and 3, a number in the B range (16 or more channels when 4 stations occupied 1 time is set) can be set for the number of CC-Link assignment channels.

For 1 station occupied 1 time, the number of CC-Link assignment channels is 1 channel or 2 channels, and thus only CH1 or CH2 can be used when the module address is "1"; the data of CH3 and CH4 cannot be handled. For this reason, caution is required when 1 station occupied 1 time is used.

When the module address is set to "free," the channel number of the first module are CH1 to CH4. Even if the address of the second module is not continuous from the address of the first module, the channel numbers are continuous.

Example: When two Z-TIO modules (4-channel type) are connected, assuming that the module addresses are 3 and 6, the channel number of the module address 3 is CH1 to CH4 and the channel number of the module address 6 is CH5 to CH8.
In this case, as two modules are used, the number of CC-Link assignment channel with 4 stations occupied 1 time setting (8 channels assignment) or larger is settable.

The number of occupied station/extended cyclic and number of CC-Link assignment channels is set by the DIP switch. For the setting procedure, see **5.3 Occupied Stations/Extended Cyclic and Controller Communication Speed Setting (P. 24).**

■ Z-DIO module

- Module address setting range: 17 to 32
- The number of assignment channel per module (when connected to COM-MC): 8 channels
- The number of the maximum available modules per the number of the CC-Link assignment channel
  1 station occupied 1 time (1 channel assignment or 2 channels assignment): 1 module
  4 stations occupied 1 time (8 channels assignment): 1 module
  4 stations occupied 1 time and 4 stations occupied 2 times (16 channels assignment): 2 modules
  4 stations occupied 2 times and 4 stations occupied 4 times (32 channels assignment): 4 modules
  4 stations occupied 4 times (64 channels assignment): 8 modules
- The following table shows the relation between the channel number (when set with the number continuous from module address 17) and the number of the available CC-Link assignment channel against each module address.
  When module addresses are set with continuous numbers starting from 17, available module addresses are from 17 to 24. (The maximum number of CC-Link assignment channel is 64)

	Module Address		17	18	19	20	21	22	23	24	·····	32
	Channel number		CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8	CH9 CH10 CH11 CH12 CH13 CH14 CH15 CH16	CH17 CH18 CH19 CH20 CH21 CH22 CH23 CH24	CH25 CH26 CH27 CH28 CH29 CH30 CH31 CH32	CH33 CH34 CH35 CH36 CH37 CH38 CH39 CH40	CH41 CH42 CH43 CH44 CH45 CH46 CH47 CH48	CH49 CH50 CH51 CH52 CH53 CH54 CH55 CH56	CH57 CH58 CH59 CH60 CH61 CH62 CH63 CH64	·····	CH121 CH122 CH123 CH124 CH125 CH126 CH127 CH128
Number of CC-Link assignment channels	4 stations occupied 1 time	8 channels assignment	A	—	—	—	—	—	—	—	—	—
		16 channels assignment	A,B	B	—	—	—	—	—	—	—	—
	4 stations occupied 2 times	16 channels assignment			—	—	—	—	—	—	—	—
		32 channels assignment	A,B,C	B,C	C		—	—	—	—	—	—
	4 stations occupied 4 times	32 channels assignment					—	—	—	—	—	—
		64 channels assignment	A,B,C,D	B,C,D	C, D		D				—	—

A: Range of number of CC-Link assignment channels that can be set when the module address setting is 17 (up to CH8).
B: Range of number of CC-Link assignment channels that can be set when the module address setting is 17 and 18 (up to CH8).
C: Range of number of CC-Link assignment channels that can be set when the module address setting is 17 to20 (up to CH32).
D: Range of number of CC-Link assignment channels that can be set when the module address setting is 17 to 24 (up to CH64).

Example: When two Z-DIO modules are joined together and the module addresses are 17 and 18, a number in the B range (16 or more channels when 4 stations occupied 1 time is set) can be set for the number of CC-Link assignment channels.

For 1 station occupied 1 time, the number of CC-Link assignment channels is 1 channel or 2 channels, and thus only CH1 or CH2 can be used when the module address is "17"; the data of CH3 to CH8 cannot be handled. For this reason, caution is required when 1 station occupied 1 time is used.

When the module address is set to "free," the channel number of the first module are CH1 to CH8. Even if the address of the second module is not continuous from the address of the first module, the channel numbers are continuous.

The number of occupied station/extended cyclic and number of CC-Link assignment channels is set by the DIP switch. For the setting procedure, see **5.3 Occupied Stations/Extended Cyclic and Controller Communication Speed Setting (P. 24).**

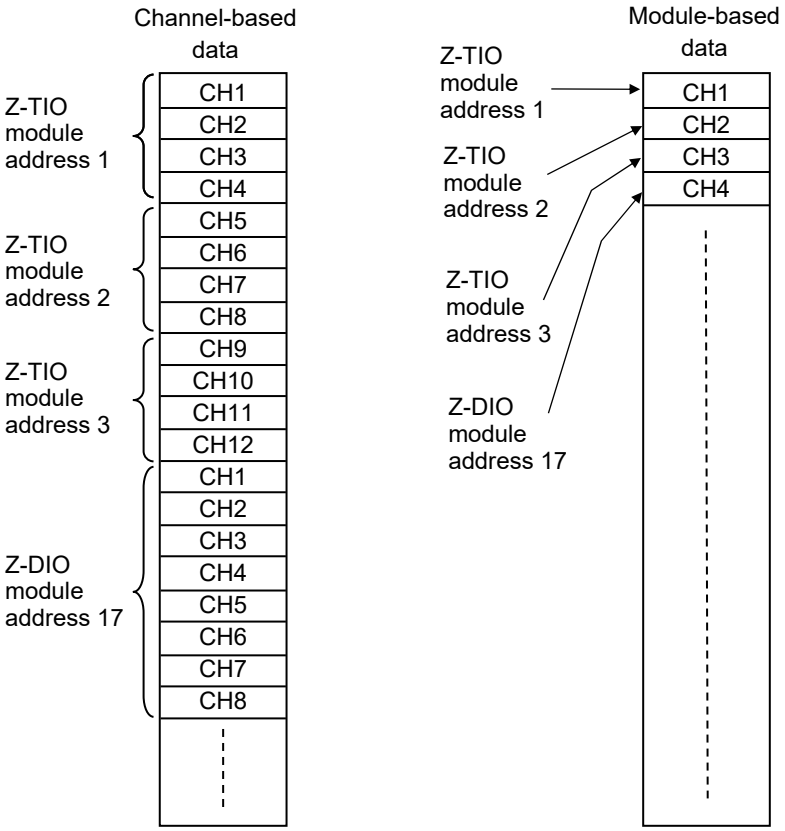
■ The number of channels by data difference

The number of channels used varies depending on the data type.

- For a Z-TIO module (4-channel type), 4 channels are used for channel-based data, however, only 1 channel is used for module-based data.
- For a Z-DIO module, 8 channels are used for channel-based data, however, only 1 channel is used for module-based data.

Example 1 When 16 Z-TIO modules (4-channel type) are connected
Channel-based data: 64 channels are used.
Module-based data: 16 channels are used.

Example2 When three Z-TIO modules (4-channel type) and one Z-DIO module are connected, the channels to be used are as follows.



7. COMMUNICATION DATA LIST

7.1 Remote Input/Output

Remote input (RX) and remote output (RY) is ON/OFF data.
"n" in the table is the address assigned to the master station by the station number setting.

■ When the number of occupied station/extended cyclic settings are the same

It can be calculated by the following equation. However, the computing equation is when a network is configured only by using our COM-MCs and the number of all exclusive stations/extended cyclic are at the same setting.

Number of occupied station/extended cyclic setting	Equation
1 station occupied 1 time	n = (Station number* − 1) × 2
4 stations occupied 1 time	n = (Station number* − 1) × 2
4 stations occupied 2 times	n = (Station number* − 1) × 3.5
4 stations occupied 4 times	n = (Station number* − 1) × 7

* Station number when there is one occupied station: 1 to 64 (each number can be set)
Station number when there are four occupied stations: 1 to 61 (four stations are occupied for each station number, and thus only numbers that are increments of four can be set: 1, 5, 9 …61)

As the calculation result is expressed in decimal number it is converted to hexadecimal number before substituted for "n" in the table.

Example: When the COM-MC is set to 4 stations occupied 1 time and its station number is "5."
n = (5 − 1) × 2 = 8 (Decimal number) → 8 (Hexadecimal number)

For station number 5: Remote inputs RXn0 to RX (n+7) F → RX80 to RXFF
Remote outputs RYn0 to RY (n+7) F → RY80 to RYFF

■ When the number of occupied station/extended cyclic settings are different

If the network consists of COM-MC modules with differing "number of occupied station/extended cyclic" settings, use for "n" the total of the highest digits (1C: 4 stations occupied 4 times) of the number of assigned registers with station number lower than the module's own station in order from the lowest station number.

Number of occupied station/extended cyclic setting	Number of assigned registers
1 station occupied 1 time	20H (Hexadecimal number)
4 stations occupied 1 time	80H (Hexadecimal number)
4 stations occupied 2 times	E0H (Hexadecimal number)
4 stations occupied 4 times	1C0H (Hexadecimal number)

Example: Calculation of "n" when the network consists of three COM-MC modules and the station numbers and "number of occupied station/extended cyclic" settings are as shown below.

1st module [Station number 1]: 4 stations occupied 2 times
n = 0 (No station numbers less than the module's own station, thus 0)
Remote inputs: RXn0 to RX (n+D) F → RX00 to RXDF
Remote outputs: RYn0 to RY (n+D) F → RY00 to RYDF

2nd module [Station number 5]: 1 station occupied 1 time
n = E (Highest digit of E0H, the number of assigned registers of station 1)
Remote inputs: RXn0 to RX (n+1) F → RXE0 to RXFF
Remote outputs: RYn0 to RY (n+1) F → RYE0 to RYFF

3rd module [Station number 6]: 4 stations occupied 1 time
n = E + 2 = 10
(Total of highest digits of E0H and 20H, the number of assigned registers of station 1 and station 5)
Remote inputs: RXn0 to RX (n+7) F → RX100 to RX17F
Remote outputs: RYn0 to RY (n+7) F → RY100 to RY17F

7.1.1 1 station occupied 1 time

■ Remote input

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 32 bits

Address	Communication item		Data range	Factory set value
RXn0	CH1 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn1		Event 2 state		—
RXn2		Burnout state		—
RXn3		Heater break alarm (HBA) state		—
RXn4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXn5	CH2 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn6		Event 2 state		—
RXn7		Burnout state		—
RXn8		Heater break alarm (HBA) state		—
RXn9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXnA	Unused		—	—
RXnB				
RXnC	Extended display completion		0: OFF 1: ON	—
RXnD	Extended setting completion			—
RXnE	Unused		—	—
RXnF	Hardware error flag		0: OFF 1: ON Hardware error flag ON condition • Major fault	—
RX(n+1)0 ⋮ RX(n+1)7	Reserved		—	—
RX(n+1)8	Initialize data processing request flag		0: OFF 1: ON	—
RX(n+1)9	Initialize data setting completion flag			—
RX(n+1)A	Error status flag		0: OFF 1: ON Error status flag ON condition • Recoverable fault • Controller communication error	—
RX(n+1)B	Remote ready		0: Not ready state 1: Ready state	—
RX(n+1)C ⋮ RX(n+1)F	Reserved		—	—

■ Remote output

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 32 bits

Address	Communication item		Data range	Factory set value
RYn0	Bit 0	Extension number for display	Display extension number are specified by the ON/OFF states of RYn0 to RYn5. Data 0: OFF 1: ON [Decimal number: 0 to 63]	0
RYn1	Bit 1			
RYn2	Bit 2			
RYn3	Bit 3			
RYn4	Bit 4			
RYn5	Bit 5			
RYn6	Bit 0	Extension number for setting	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB. Data 0: OFF 1: ON [Decimal number: 0 to 63]	0
RYn7	Bit 1			
RYn8	Bit 2			
RYn9	Bit 3			
RYnA	Bit 4			
RYnB	Bit 5			
RYnC	Extended display flag		0: OFF 1: ON	0
RYnD	Extended setting flag (Setting update flag)			0
RYnE	Unused		—	—
RYnF	RUN/STOP transfer		Logic of RUN/STOP transfer is different by model code. For COM-MC∗02-**1** 0: RUN (Control start) 1: STOP (Control stop) For COM-MC∗02-**2** 0: STOP (Control stop) 1: RUN (Control start)	0
RY(n+1)0 ⋮ RY(n+1)7	Reserved		—	—
RY(n+1)8	Initialize data processing completion flag		0: OFF 1: ON	0
RY(n+1)9	Initialize data setting request flag			0
RY(n+1)A	Error reset request flag			0
RY(n+1)B ⋮ RY(n+1)F	Reserved		—	—

7.1.2 4 stations occupied 1 time

■ Remote input

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 128 bits

Address	Communication item		Data range	Factory set value
RXn0	CH1 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn1		Event 2 state		—
RXn2		Burnout state		—
RXn3		Heater break alarm (HBA) state		—
RXn4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXn5	CH2 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn6		Event 2 state		—
RXn7		Burnout state		—
RXn8		Heater break alarm (HBA) state		—
RXn9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXnA	Unused		—	—
RXnB				
RXnC	Extended display completion		0: OFF 1: ON	—
RXnD	Extended setting completion			—
RXnE	Unused		—	—
RXnF	Hardware error flag		0: OFF 1: ON Hardware error flag ON condition • Major fault	—
RX(n+1)0 ⋮ RX(n+1)F	Unused		—	—
RX(n+2)0	CH3 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)1		Event 2 state		—
RX(n+2)2		Burnout state		—
RX(n+2)3		Heater break alarm (HBA) state		—
RX(n+2)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)5	CH4 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)6		Event 2 state		—
RX(n+2)7		Burnout state		—
RX(n+2)8		Heater break alarm (HBA) state		—
RX(n+2)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)A	CH5 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)B		Event 2 state		—
RX(n+2)C		Burnout state		—
RX(n+2)D		Heater break alarm (HBA) state		—
RX(n+2)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+2)F	CH6 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)0		Event 2 state		—
RX(n+3)1		Burnout state		—
RX(n+3)2		Heater break alarm (HBA) state		—
RX(n+3)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)4	CH7 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)5		Event 2 state		—
RX(n+3)6		Burnout state		—
RX(n+3)7		Heater break alarm (HBA) state		—
RX(n+3)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)9	CH8 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)A		Event 2 state		—
RX(n+3)B		Burnout state		—
RX(n+3)C		Heater break alarm (HBA) state		—
RX(n+3)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)E	Unused		—	—
RX(n+3)F				
RX(n+4)0	CH9 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)1		Event 2 state		—
RX(n+4)2		Burnout state		—
RX(n+4)3		Heater break alarm (HBA) state		—
RX(n+4)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)5	CH10 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)6		Event 2 state		—
RX(n+4)7		Burnout state		—
RX(n+4)8		Heater break alarm (HBA) state		—
RX(n+4)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)A	CH11 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)B		Event 2 state		—
RX(n+4)C		Burnout state		—
RX(n+4)D		Heater break alarm (HBA) state		—
RX(n+4)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)F	CH12 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)0		Event 2 state		—
RX(n+5)1		Burnout state		—
RX(n+5)2		Heater break alarm (HBA) state		—
RX(n+5)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)4	CH13 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)5		Event 2 state		—
RX(n+5)6		Burnout state		—
RX(n+5)7		Heater break alarm (HBA) state		—
RX(n+5)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+5)9	CH14 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)A		Event 2 state		—
RX(n+5)B		Burnout state		—
RX(n+5)C		Heater break alarm (HBA) state		—
RX(n+5)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)E	Unused		—	—
RX(n+5)F				
RX(n+6)0	CH15 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)1		Event 2 state		—
RX(n+6)2		Burnout state		—
RX(n+6)3		Heater break alarm (HBA) state		—
RX(n+6)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)5	CH16 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)6		Event 2 state		—
RX(n+6)7		Burnout state		—
RX(n+6)8		Heater break alarm (HBA) state		—
RX(n+6)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)A ⋮ RX(n+6)F	Unused		—	—
RX(n+7)0 ⋮ RX(n+7)7	Reserved		—	—
RX(n+7)8	Initialize data processing request flag		0: OFF 1: ON	—
RX(n+7)9	Initialize data setting completion flag			—
RX(n+7)A	Error status flag		0: OFF 1: ON Error status flag ON condition • Recoverable fault • Controller communication error	—
RX(n+7)B	Remote ready		0: Not ready state 1: Ready state	—
RX(n+7)C ⋮ RX(n+7)F	Reserved		—	—

■ Remote output

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 128 bits

Address	Communication item		Data range	Factory set value
RYn0	Bit 0	Extension number for display	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn1	Bit 1			
RYn2	Bit 2			
RYn3	Bit 3			
RYn4	Bit 4			
RYn5	Bit 5			
RYn6	Bit 0	Extension number for setting	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn7	Bit 1			
RYn8	Bit 2			
RYn9	Bit 3			
RYnA	Bit 4			
RYnB	Bit 5			
RYnC	Extended display flag		0: OFF 1: ON	0
RYnD	Extended setting flag (Setting update flag)			0
RYnE	Unused		—	—
RYnF	RUN/STOP transfer		Logic of RUN/STOP transfer is different by model code. For COM-MC∗02-**1** 0: RUN (Control start) 1: STOP (Control stop) For COM-MC∗02-**2** 0: STOP (Control stop) 1: RUN (Control start)	0
RY(n+1)0	Bit 6	Extension number for display Bit 9 to Bit 13: Unused	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)1	Bit 7			
RY(n+1)2	Bit 8			
RY(n+1)3	Bit 9			
RY(n+1)4	Bit 10			
RY(n+1)5	Bit 11			
RY(n+1)6	Bit 12			
RY(n+1)7	Bit 13			
RY(n+1)8	Bit 6	Extension number for setting Bit 9 to Bit 13: Unused	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)9	Bit 7			
RY(n+1)A	Bit 8			
RY(n+1)B	Bit 9			
RY(n+1)C	Bit 10			
RY(n+1)D	Bit 11			
RY(n+1)E	Bit 12			
RY(n+1)F	Bit 13			

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Address	Communication item		Data range	Factory set value
RY(n+2)0	Bit 0	Area number for display Bit 4 to Bit 7: Unused	Display area number are specified by the ON/OFF states of RY(n+2)0 to RY(n+2)3. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)1	Bit 1			
RY(n+2)2	Bit 2			
RY(n+2)3	Bit 3			
RY(n+2)4	Bit 4			
RY(n+2)5	Bit 5			
RY(n+2)6	Bit 6			
RY(n+2)7	Bit 7			
RY(n+2)8	Bit 0	Area number for setting Bit 4 to Bit 7: Unused	Setting area number are specified by the ON/OFF states of RY(n+2)8 to RY(n+2)B. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)9	Bit 1			
RY(n+2)A	Bit 2			
RY(n+2)B	Bit 3			
RY(n+2)C	Bit 4			
RY(n+2)D	Bit 5			
RY(n+2)E	Bit 6			
RY(n+2)F	Bit 7			
RY(n+3)0 ⋮ RY(n+6)F	Unused		—	—
RY(n+7)0 ⋮ RY(n+7)7	Reserved		—	—
RY(n+7)8	Initialize data processing completion flag		0: OFF 1: ON	0
RY(n+7)9	Initialize data setting request flag			0
RY(n+7)A	Error reset request flag			0
RY(n+7)B ⋮ RY(n+7)F	Reserved		—	—

7.1.3 4 stations occupied 2 times

■ Remote input

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 224 bits

Address	Communication item		Data range	Factory set value
RXn0	CH1 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn1		Event 2 state		—
RXn2		Burnout state		—
RXn3		Heater break alarm (HBA) state		—
RXn4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXn5	CH2 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn6		Event 2 state		—
RXn7		Burnout state		—
RXn8		Heater break alarm (HBA) state		—
RXn9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXnA	Unused		—	—
RXnB				
RXnC	Extended display completion		0: OFF 1: ON	—
RXnD	Extended setting completion			—
RXnE	Unused		—	—
RXnF	Hardware error flag		0: OFF 1: ON Hardware error flag ON condition • Major fault	—
RX(n+1)0 ⋮ RX(n+1)F	Unused		—	—
RX(n+2)0	CH3 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)1		Event 2 state		—
RX(n+2)2		Burnout state		—
RX(n+2)3		Heater break alarm (HBA) state		—
RX(n+2)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)5	CH4 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)6		Event 2 state		—
RX(n+2)7		Burnout state		—
RX(n+2)8		Heater break alarm (HBA) state		—
RX(n+2)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)A	CH5 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)B		Event 2 state		—
RX(n+2)C		Burnout state		—
RX(n+2)D		Heater break alarm (HBA) state		—
RX(n+2)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+2)F	CH6 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)0		Event 2 state		—
RX(n+3)1		Burnout state		—
RX(n+3)2		Heater break alarm (HBA) state		—
RX(n+3)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)4	CH7 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)5		Event 2 state		—
RX(n+3)6		Burnout state		—
RX(n+3)7		Heater break alarm (HBA) state		—
RX(n+3)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)9	CH8 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)A		Event 2 state		—
RX(n+3)B		Burnout state		—
RX(n+3)C		Heater break alarm (HBA) state		—
RX(n+3)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)E	Unused		—	—
RX(n+3)F				
RX(n+4)0	CH9 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)1		Event 2 state		—
RX(n+4)2		Burnout state		—
RX(n+4)3		Heater break alarm (HBA) state		—
RX(n+4)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)5	CH10 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)6		Event 2 state		—
RX(n+4)7		Burnout state		—
RX(n+4)8		Heater break alarm (HBA) state		—
RX(n+4)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)A	CH11 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)B		Event 2 state		—
RX(n+4)C		Burnout state		—
RX(n+4)D		Heater break alarm (HBA) state		—
RX(n+4)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)F	CH12 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)0		Event 2 state		—
RX(n+5)1		Burnout state		—
RX(n+5)2		Heater break alarm (HBA) state		—
RX(n+5)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)4	CH13 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)5		Event 2 state		—
RX(n+5)6		Burnout state		—
RX(n+5)7		Heater break alarm (HBA) state		—
RX(n+5)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+5)9	CH14 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)A		Event 2 state		—
RX(n+5)B		Burnout state		—
RX(n+5)C		Heater break alarm (HBA) state		—
RX(n+5)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)E	Unused		—	—
RX(n+5)F				
RX(n+6)0	CH15 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)1		Event 2 state		—
RX(n+6)2		Burnout state		—
RX(n+6)3		Heater break alarm (HBA) state		—
RX(n+6)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)5	CH16 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)6		Event 2 state		—
RX(n+6)7		Burnout state		—
RX(n+6)8		Heater break alarm (HBA) state		—
RX(n+6)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)A ⋮ RX(n+6)F	Unused		—	—
RX(n+7)0	CH17 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)1		Event 2 state		—
RX(n+7)2		Burnout state		—
RX(n+7)3		Heater break alarm (HBA) state		—
RX(n+7)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)5	CH18 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)6		Event 2 state		—
RX(n+7)7		Burnout state		—
RX(n+7)8		Heater break alarm (HBA) state		—
RX(n+7)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)A	CH19 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)B		Event 2 state		—
RX(n+7)C		Burnout state		—
RX(n+7)D		Heater break alarm (HBA) state		—
RX(n+7)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)F	Unused		—	—
RX(n+8)0	CH20 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)1		Event 2 state		—
RX(n+8)2		Burnout state		—
RX(n+8)3		Heater break alarm (HBA) state		—
RX(n+8)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Continued from the previous page.

Address	Communication item		Data range	Factory set value
RX(n+8)5	CH21 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)6		Event 2 state		—
RX(n+8)7		Burnout state		—
RX(n+8)8		Heater break alarm (HBA) state		—
RX(n+8)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+8)A	CH22 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)B		Event 2 state		—
RX(n+8)C		Burnout state		—
RX(n+8)D		Heater break alarm (HBA) state		—
RX(n+8)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+8)F	Unused		—	—
RX(n+9)0	CH23 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)1		Event 2 state		—
RX(n+9)2		Burnout state		—
RX(n+9)3		Heater break alarm (HBA) state		—
RX(n+9)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)5	CH24 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)6		Event 2 state		—
RX(n+9)7		Burnout state		—
RX(n+9)8		Heater break alarm (HBA) state		—
RX(n+9)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)A	CH25 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)B		Event 2 state		—
RX(n+9)C		Burnout state		—
RX(n+9)D		Heater break alarm (HBA) state		—
RX(n+9)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)F	Unused		—	—
RX(n+A)0	CH26 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)1		Event 2 state		—
RX(n+A)2		Burnout state		—
RX(n+A)3		Heater break alarm (HBA) state		—
RX(n+A)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+A)5	CH27 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)6		Event 2 state		—
RX(n+A)7		Burnout state		—
RX(n+A)8		Heater break alarm (HBA) state		—
RX(n+A)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+A)A	CH28 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)B		Event 2 state		—
RX(n+A)C		Burnout state		—
RX(n+A)D		Heater break alarm (HBA) state		—
RX(n+A)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+A)F	Unused		—	—
RX(n+B)0	CH29 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)1		Event 2 state		—
RX(n+B)2		Burnout state		—
RX(n+B)3		Heater break alarm (HBA) state		—
RX(n+B)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)5	CH30 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)6		Event 2 state		—
RX(n+B)7		Burnout state		—
RX(n+B)8		Heater break alarm (HBA) state		—
RX(n+B)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)A	CH31 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)B		Event 2 state		—
RX(n+B)C		Burnout state		—
RX(n+B)D		Heater break alarm (HBA) state		—
RX(n+B)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)F	Unused		—	—
RX(n+C)0	CH32 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+C)1		Event 2 state		—
RX(n+C)2		Burnout state		—
RX(n+C)3		Heater break alarm (HBA) state		—
RX(n+C)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+C)5 ⋮ RX(n+C)F	Unused		—	—
RX(n+D)0 ⋮ RX(n+D)7	Reserved		—	—
RX(n+D)8	Initialize data processing request flag		0: OFF 1: ON	—
RX(n+D)9	Initialize data setting completion flag			—
RX(n+D)A	Error status flag		0: OFF 1: ON Error status flag ON condition • Recoverable fault • Controller communication error	—
RX(n+D)B	Remote ready		0: Not ready state 1: Ready state	—
RX(n+D)C ⋮ RX(n+D)F	Reserved		—	—

■ Remote output

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 224 bits

Address	Communication item		Data range	Factory set value
RYn0	Bit 0	Extension number for display	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn1	Bit 1			
RYn2	Bit 2			
RYn3	Bit 3			
RYn4	Bit 4			
RYn5	Bit 5			
RYn6	Bit 0	Extension number for setting	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn7	Bit 1			
RYn8	Bit 2			
RYn9	Bit 3			
RYnA	Bit 4			
RYnB	Bit 5			
RYnC	Extended display flag		0: OFF 1: ON	0
RYnD	Extended setting flag (Setting update flag)			0
RYnE	Unused		—	—
RYnF	RUN/STOP transfer		Logic of RUN/STOP transfer is different by model code. For COM-MC∗02-**1** 0: RUN (Control start) 1: STOP (Control stop) For COM-MC∗02-**2** 0: STOP (Control stop) 1: RUN (Control start)	0
RY(n+1)0	Bit 6	Extension number for display Bit 9 to Bit 13: Unused	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)1	Bit 7			
RY(n+1)2	Bit 8			
RY(n+1)3	Bit 9			
RY(n+1)4	Bit 10			
RY(n+1)5	Bit 11			
RY(n+1)6	Bit 12			
RY(n+1)7	Bit 13			
RY(n+1)8	Bit 6	Extension number for setting Bit 9 to Bit 13: Unused	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)9	Bit 7			
RY(n+1)A	Bit 8			
RY(n+1)B	Bit 9			
RY(n+1)C	Bit 10			
RY(n+1)D	Bit 11			
RY(n+1)E	Bit 12			
RY(n+1)F	Bit 13			

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Address	Communication item		Data range	Factory set value
RY(n+2)0	Bit 0	Area number for display Bit 4 to Bit 7: Unused	Display area number are specified by the ON/OFF states of RY(n+2)0 to RY(n+2)3. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)1	Bit 1			
RY(n+2)2	Bit 2			
RY(n+2)3	Bit 3			
RY(n+2)4	Bit 4			
RY(n+2)5	Bit 5			
RY(n+2)6	Bit 6			
RY(n+2)7	Bit 7			
RY(n+2)8	Bit 0	Area number for setting Bit 4 to Bit 7: Unused	Setting area number are specified by the ON/OFF states of RY(n+2)8 to RY(n+2)B. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)9	Bit 1			
RY(n+2)A	Bit 2			
RY(n+2)B	Bit 3			
RY(n+2)C	Bit 4			
RY(n+2)D	Bit 5			
RY(n+2)E	Bit 6			
RY(n+2)F	Bit 7			
RY(n+3)0 ⋮ RY(n+C)F	Unused		—	—
RY(n+D)0 ⋮ RY(n+D)7	Reserved		—	—
RY(n+D)8	Initialize data processing completion flag		0: OFF 1: ON	0
RY(n+D)9	Initialize data setting request flag			0
RY(n+D)A	Error reset request flag			0
RY(n+D)B ⋮ RY(n+D)F	Reserved		—	—

7.1.4 4 stations occupied 4 times

■ Remote input

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 448 bits

Address	Communication item		Data range	Factory set value
RXn0	CH1 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn1		Event 2 state		—
RXn2		Burnout state		—
RXn3		Heater break alarm (HBA) state		—
RXn4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXn5	CH2 (1st module)	Event 1 state	0: OFF 1: ON	—
RXn6		Event 2 state		—
RXn7		Burnout state		—
RXn8		Heater break alarm (HBA) state		—
RXn9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RXnA	Unused		—	—
RXnB				
RXnC	Extended display completion		0: OFF 1: ON	—
RXnD	Extended setting completion			—
RXnE	Unused		—	—
RXnF	Hardware error flag		0: OFF 1: ON Hardware error flag ON condition • Major fault	—
RX(n+1)0 ⋮ RX(n+1)F	Unused		—	—
RX(n+2)0	CH3 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)1		Event 2 state		—
RX(n+2)2		Burnout state		—
RX(n+2)3		Heater break alarm (HBA) state		—
RX(n+2)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)5	CH4 (1st module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)6		Event 2 state		—
RX(n+2)7		Burnout state		—
RX(n+2)8		Heater break alarm (HBA) state		—
RX(n+2)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+2)A	CH5 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+2)B		Event 2 state		—
RX(n+2)C		Burnout state		—
RX(n+2)D		Heater break alarm (HBA) state		—
RX(n+2)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+2)F	CH6 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)0		Event 2 state		—
RX(n+3)1		Burnout state		—
RX(n+3)2		Heater break alarm (HBA) state		—
RX(n+3)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)4	CH7 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)5		Event 2 state		—
RX(n+3)6		Burnout state		—
RX(n+3)7		Heater break alarm (HBA) state		—
RX(n+3)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)9	CH8 (2nd module)	Event 1 state	0: OFF 1: ON	—
RX(n+3)A		Event 2 state		—
RX(n+3)B		Burnout state		—
RX(n+3)C		Heater break alarm (HBA) state		—
RX(n+3)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+3)E	Unused		—	—
RX(n+3)F				
RX(n+4)0	CH9 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)1		Event 2 state		—
RX(n+4)2		Burnout state		—
RX(n+4)3		Heater break alarm (HBA) state		—
RX(n+4)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)5	CH10 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)6		Event 2 state		—
RX(n+4)7		Burnout state		—
RX(n+4)8		Heater break alarm (HBA) state		—
RX(n+4)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)A	CH11 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+4)B		Event 2 state		—
RX(n+4)C		Burnout state		—
RX(n+4)D		Heater break alarm (HBA) state		—
RX(n+4)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+4)F	CH12 (3rd module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)0		Event 2 state		—
RX(n+5)1		Burnout state		—
RX(n+5)2		Heater break alarm (HBA) state		—
RX(n+5)3		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)4	CH13 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)5		Event 2 state		—
RX(n+5)6		Burnout state		—
RX(n+5)7		Heater break alarm (HBA) state		—
RX(n+5)8		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+5)9	CH14 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+5)A		Event 2 state		—
RX(n+5)B		Burnout state		—
RX(n+5)C		Heater break alarm (HBA) state		—
RX(n+5)D		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+5)E	Unused		—	—
RX(n+5)F				
RX(n+6)0	CH15 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)1		Event 2 state		—
RX(n+6)2		Burnout state		—
RX(n+6)3		Heater break alarm (HBA) state		—
RX(n+6)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)5	CH16 (4th module)	Event 1 state	0: OFF 1: ON	—
RX(n+6)6		Event 2 state		—
RX(n+6)7		Burnout state		—
RX(n+6)8		Heater break alarm (HBA) state		—
RX(n+6)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+6)A ⋮ RX(n+6)F	Unused		—	—
RX(n+7)0	CH17 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)1		Event 2 state		—
RX(n+7)2		Burnout state		—
RX(n+7)3		Heater break alarm (HBA) state		—
RX(n+7)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)5	CH18 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)6		Event 2 state		—
RX(n+7)7		Burnout state		—
RX(n+7)8		Heater break alarm (HBA) state		—
RX(n+7)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)A	CH19 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+7)B		Event 2 state		—
RX(n+7)C		Burnout state		—
RX(n+7)D		Heater break alarm (HBA) state		—
RX(n+7)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+7)F	Unused		—	—
RX(n+8)0	CH20 (5th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)1		Event 2 state		—
RX(n+8)2		Burnout state		—
RX(n+8)3		Heater break alarm (HBA) state		—
RX(n+8)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Continued from the previous page.

Address	Communication item		Data range	Factory set value
RX(n+8)5	CH21 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)6		Event 2 state		—
RX(n+8)7		Burnout state		—
RX(n+8)8		Heater break alarm (HBA) state		—
RX(n+8)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+8)A	CH22 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+8)B		Event 2 state		—
RX(n+8)C		Burnout state		—
RX(n+8)D		Heater break alarm (HBA) state		—
RX(n+8)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+8)F	Unused		—	—
RX(n+9)0	CH23 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)1		Event 2 state		—
RX(n+9)2		Burnout state		—
RX(n+9)3		Heater break alarm (HBA) state		—
RX(n+9)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)5	CH24 (6th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)6		Event 2 state		—
RX(n+9)7		Burnout state		—
RX(n+9)8		Heater break alarm (HBA) state		—
RX(n+9)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)A	CH25 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+9)B		Event 2 state		—
RX(n+9)C		Burnout state		—
RX(n+9)D		Heater break alarm (HBA) state		—
RX(n+9)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+9)F	Unused		—	—
RX(n+A)0	CH26 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)1		Event 2 state		—
RX(n+A)2		Burnout state		—
RX(n+A)3		Heater break alarm (HBA) state		—
RX(n+A)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+A)5	CH27 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)6		Event 2 state		—
RX(n+A)7		Burnout state		—
RX(n+A)8		Heater break alarm (HBA) state		—
RX(n+A)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+A)A	CH28 (7th module)	Event 1 state	0: OFF 1: ON	—
RX(n+A)B		Event 2 state		—
RX(n+A)C		Burnout state		—
RX(n+A)D		Heater break alarm (HBA) state		—
RX(n+A)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Continued from the previous page.

Address	Communication item		Data range	Factory set value
RX(n+A)F	Unused		—	—
RX(n+B)0	CH29 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)1		Event 2 state		—
RX(n+B)2		Burnout state		—
RX(n+B)3		Heater break alarm (HBA) state		—
RX(n+B)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)5	CH30 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)6		Event 2 state		—
RX(n+B)7		Burnout state		—
RX(n+B)8		Heater break alarm (HBA) state		—
RX(n+B)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)A	CH31 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+B)B		Event 2 state		—
RX(n+B)C		Burnout state		—
RX(n+B)D		Heater break alarm (HBA) state		—
RX(n+B)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+B)F	Unused		—	—
RX(n+C)0	CH32 (8th module)	Event 1 state	0: OFF 1: ON	—
RX(n+C)1		Event 2 state		—
RX(n+C)2		Burnout state		—
RX(n+C)3		Heater break alarm (HBA) state		—
RX(n+C)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+C)5	CH33 (9th module)	Event 1 state	0: OFF 1: ON	—
RX(n+C)6		Event 2 state		—
RX(n+C)7		Burnout state		—
RX(n+C)8		Heater break alarm (HBA) state		—
RX(n+C)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+C)A	CH34 (9th module)	Event 1 state	0: OFF 1: ON	—
RX(n+C)B		Event 2 state		—
RX(n+C)C		Burnout state		—
RX(n+C)D		Heater break alarm (HBA) state		—
RX(n+C)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+C)F	Unused		—	—
RX(n+D)0	CH35 (9th module)	Event 1 state	0: OFF 1: ON	—
RX(n+D)1		Event 2 state		—
RX(n+D)2		Burnout state		—
RX(n+D)3		Heater break alarm (HBA) state		—
RX(n+D)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+D)5	CH36 (9th module)	Event 1 state	0: OFF 1: ON	—
RX(n+D)6		Event 2 state		—
RX(n+D)7		Burnout state		—
RX(n+D)8		Heater break alarm (HBA) state		—
RX(n+D)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+D)A	CH37 (10th module)	Event 1 state	0: OFF 1: ON	—
RX(n+D)B		Event 2 state		—
RX(n+D)C		Burnout state		—
RX(n+D)D		Heater break alarm (HBA) state		—
RX(n+D)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+D)F	Unused		—	—
RX(n+E)0	CH38 (10th module)	Event 1 state	0: OFF 1: ON	—
RX(n+E)1		Event 2 state		—
RX(n+E)2		Burnout state		—
RX(n+E)3		Heater break alarm (HBA) state		—
RX(n+E)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+E)5	CH39 (10th module)	Event 1 state	0: OFF 1: ON	—
RX(n+E)6		Event 2 state		—
RX(n+E)7		Burnout state		—
RX(n+E)8		Heater break alarm (HBA) state		—
RX(n+E)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+E)A	CH40 (10th module)	Event 1 state	0: OFF 1: ON	—
RX(n+E)B		Event 2 state		—
RX(n+E)C		Burnout state		—
RX(n+E)D		Heater break alarm (HBA) state		—
RX(n+E)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+E)F	Unused		—	—
RX(n+F)0	CH41 (11th module)	Event 1 state	0: OFF 1: ON	—
RX(n+F)1		Event 2 state		—
RX(n+F)2		Burnout state		—
RX(n+F)3		Heater break alarm (HBA) state		—
RX(n+F)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+F)5	CH42 (11th module)	Event 1 state	0: OFF 1: ON	—
RX(n+F)6		Event 2 state		—
RX(n+F)7		Burnout state		—
RX(n+F)8		Heater break alarm (HBA) state		—
RX(n+F)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+F)A	CH43 (11th module)	Event 1 state	0: OFF 1: ON	—
RX(n+F)B		Event 2 state		—
RX(n+F)C		Burnout state		—
RX(n+F)D		Heater break alarm (HBA) state		—
RX(n+F)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+F)F	Unused		—	—
RX(n+10)0	CH44 (11th module)	Event 1 state	0: OFF 1: ON	—
RX(n+10)1		Event 2 state		—
RX(n+10)2		Burnout state		—
RX(n+10)3		Heater break alarm (HBA) state		—
RX(n+10)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+10)5	CH45 (12th module)	Event 1 state	0: OFF 1: ON	—
RX(n+10)6		Event 2 state		—
RX(n+10)7		Burnout state		—
RX(n+10)8		Heater break alarm (HBA) state		—
RX(n+10)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+10)A	CH46 (12th module)	Event 1 state	0: OFF 1: ON	—
RX(n+10)B		Event 2 state		—
RX(n+10)C		Burnout state		—
RX(n+10)D		Heater break alarm (HBA) state		—
RX(n+10)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+10)F	Unused		—	—
RX(n+11)0	CH47 (12th module)	Event 1 state	0: OFF 1: ON	—
RX(n+11)1		Event 2 state		—
RX(n+11)2		Burnout state		—
RX(n+11)3		Heater break alarm (HBA) state		—
RX(n+11)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+11)5	CH48 (12th module)	Event 1 state	0: OFF 1: ON	—
RX(n+11)6		Event 2 state		—
RX(n+11)7		Burnout state		—
RX(n+11)8		Heater break alarm (HBA) state		—
RX(n+11)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+11)A	CH49 (13th module)	Event 1 state	0: OFF 1: ON	—
RX(n+11)B		Event 2 state		—
RX(n+11)C		Burnout state		—
RX(n+11)D		Heater break alarm (HBA) state		—
RX(n+11)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+11)F	Unused		—	—
RX(n+12)0	CH50 (13th module)	Event 1 state	0: OFF 1: ON	—
RX(n+12)1		Event 2 state		—
RX(n+12)2		Burnout state		—
RX(n+12)3		Heater break alarm (HBA) state		—
RX(n+12)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+12)5	CH51 (13th module)	Event 1 state	0: OFF 1: ON	—
RX(n+12)6		Event 2 state		—
RX(n+12)7		Burnout state		—
RX(n+12)8		Heater break alarm (HBA) state		—
RX(n+12)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+12)A	CH52 (13th module)	Event 1 state	0: OFF 1: ON	—
RX(n+12)B		Event 2 state		—
RX(n+12)C		Burnout state		—
RX(n+12)D		Heater break alarm (HBA) state		—
RX(n+12)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+12)F	Unused		—	—
RX(n+13)0	CH53 (14th module)	Event 1 state	0: OFF 1: ON	—
RX(n+13)1		Event 2 state		—
RX(n+13)2		Burnout state		—
RX(n+13)3		Heater break alarm (HBA) state		—
RX(n+13)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+13)5	CH54 (14th module)	Event 1 state	0: OFF 1: ON	—
RX(n+13)6		Event 2 state		—
RX(n+13)7		Burnout state		—
RX(n+13)8		Heater break alarm (HBA) state		—
RX(n+13)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+13)A	CH55 (14th module)	Event 1 state	0: OFF 1: ON	—
RX(n+13)B		Event 2 state		—
RX(n+13)C		Burnout state		—
RX(n+13)D		Heater break alarm (HBA) state		—
RX(n+13)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+13)F	Unused		—	—
RX(n+14)0	CH56 (14th module)	Event 1 state	0: OFF 1: ON	—
RX(n+14)1		Event 2 state		—
RX(n+14)2		Burnout state		—
RX(n+14)3		Heater break alarm (HBA) state		—
RX(n+14)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+14)5	CH57 (15th module)	Event 1 state	0: OFF 1: ON	—
RX(n+14)6		Event 2 state		—
RX(n+14)7		Burnout state		—
RX(n+14)8		Heater break alarm (HBA) state		—
RX(n+14)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+14)A	CH58 (15th module)	Event 1 state	0: OFF 1: ON	—
RX(n+14)B		Event 2 state		—
RX(n+14)C		Burnout state		—
RX(n+14)D		Heater break alarm (HBA) state		—
RX(n+14)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—

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Address	Communication item		Data range	Factory set value
RX(n+14)F	Unused		—	—
RX(n+15)0	CH59 (15th module)	Event 1 state	0: OFF 1: ON	—
RX(n+15)1		Event 2 state		—
RX(n+15)2		Burnout state		—
RX(n+15)3		Heater break alarm (HBA) state		—
RX(n+15)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+15)5	CH60 (15th module)	Event 1 state	0: OFF 1: ON	—
RX(n+15)6		Event 2 state		—
RX(n+15)7		Burnout state		—
RX(n+15)8		Heater break alarm (HBA) state		—
RX(n+15)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+15)A	CH61 (16th module)	Event 1 state	0: OFF 1: ON	—
RX(n+15)B		Event 2 state		—
RX(n+15)C		Burnout state		—
RX(n+15)D		Heater break alarm (HBA) state		—
RX(n+15)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+15)F	Unused		—	—
RX(n+16)0	CH62 (16th module)	Event 1 state	0: OFF 1: ON	—
RX(n+16)1		Event 2 state		—
RX(n+16)2		Burnout state		—
RX(n+16)3		Heater break alarm (HBA) state		—
RX(n+16)4		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+16)5	CH63 (16th module)	Event 1 state	0: OFF 1: ON	—
RX(n+16)6		Event 2 state		—
RX(n+16)7		Burnout state		—
RX(n+16)8		Heater break alarm (HBA) state		—
RX(n+16)9		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+16)A	CH64 (16th module)	Event 1 state	0: OFF 1: ON	—
RX(n+16)B		Event 2 state		—
RX(n+16)C		Burnout state		—
RX(n+16)D		Heater break alarm (HBA) state		—
RX(n+16)E		PID/AT transfer state	0: PID control 1: Autotuning (AT)	—
RX(n+16)F ⋮ RX(n+1A)F	Unused		—	—
RX(n+1B)0 ⋮ RX(n+1B)7	Reserved		—	—
RX(n+1B)8	Initialize data processing request flag		0: OFF 1: ON	—
RX(n+1B)9	Initialize data setting completion flag			—

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Address	Communication item	Data range	Factory set value
RX(n+1B)A	Error status flag	0: OFF 1: ON Error status flag ON condition • Recoverable fault • Controller communication error	—
RX(n+1B)B	Remote ready	0: Not ready state 1: Ready state	—
RX(n+1B)C ⋮ RX(n+1B)F	Reserved	—	—

■ Remote output

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 448 bits

Address	Communication item		Data range	Factory set value
RYn0	Bit 0	Extension number for display	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn1	Bit 1			
RYn2	Bit 2			
RYn3	Bit 3			
RYn4	Bit 4			
RYn5	Bit 5			
RYn6	Bit 0	Extension number for setting	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RYn7	Bit 1			
RYn8	Bit 2			
RYn9	Bit 3			
RYnA	Bit 4			
RYnB	Bit 5			
RYnC	Extended display flag		0: OFF 1: ON	0
RYnD	Extended setting flag (Setting update flag)			0
RYnE	Unused		—	—
RYnF	RUN/STOP transfer		Logic of RUN/STOP transfer is different by model code. For COM-MC∗02-**1** 0: RUN (Control start) 1: STOP (Control stop) For COM-MC∗02-**2** 0: STOP (Control stop) 1: RUN (Control start)	0
RY(n+1)0	Bit 6	Extension number for display Bit 9 to Bit 13: Unused	Display extension number are specified by the ON/OFF states of RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)1	Bit 7			
RY(n+1)2	Bit 8			
RY(n+1)3	Bit 9			
RY(n+1)4	Bit 10			
RY(n+1)5	Bit 11			
RY(n+1)6	Bit 12			
RY(n+1)7	Bit 13			
RY(n+1)8	Bit 6	Extension number for setting Bit 9 to Bit 13: Unused	Setting extension number are specified by the ON/OFF states of RYn6 to RYnB and RY(n+1)8 to RY(n+1)A. Data 0: OFF 1: ON [Decimal number: 0 to 511]	0
RY(n+1)9	Bit 7			
RY(n+1)A	Bit 8			
RY(n+1)B	Bit 9			
RY(n+1)C	Bit 10			
RY(n+1)D	Bit 11			
RY(n+1)E	Bit 12			
RY(n+1)F	Bit 13			

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Address	Communication item		Data range	Factory set value
RY(n+2)0	Bit 0	Area number for display Bit 4 to Bit 7: Unused	Display area number are specified by the ON/OFF states of RY(n+2)0 to RY(n+2)3. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)1	Bit 1			
RY(n+2)2	Bit 2			
RY(n+2)3	Bit 3			
RY(n+2)4	Bit 4			
RY(n+2)5	Bit 5			
RY(n+2)6	Bit 6			
RY(n+2)7	Bit 7			
RY(n+2)8	Bit 0	Area number for setting Bit 4 to Bit 7: Unused	Setting area number are specified by the ON/OFF states of RY(n+2)8 to RY(n+2)B. Data 0: OFF 1: ON [Decimal number: 0 to 16] (0, 9 to 16: Control area)	0
RY(n+2)9	Bit 1			
RY(n+2)A	Bit 2			
RY(n+2)B	Bit 3			
RY(n+2)C	Bit 4			
RY(n+2)D	Bit 5			
RY(n+2)E	Bit 6			
RY(n+2)F	Bit 7			
RY(n+3)0 ⋮ RY(n+1A)F	Unused		—	—
RY(n+1B)0 ⋮ RY(n+1B)7	Reserved		—	—
RY(n+1B)8	Initialize data processing completion flag		0: OFF 1: ON	0
RY(n+1B)9	Initialize data setting request flag			0
RY(n+1B)A	Error reset request flag			0
RY(n+1B)B ⋮ RY(n+1B)F	Reserved		—	—

7.2 Remote Register

Remote registers (RWr, RWw) are numeric data.
"n" in the table is the address assigned to the master station by the station number setting.

■ When the number of occupied station/extended cyclic settings are the same

It can be calculated by the following equation. However, the computing equation is when a network is configured only by using our COM-MCs and the number of all exclusive stations/extended cyclic are at the same setting.

Number of occupied station/extended cyclic setting	Equation
1 station occupied 1 time	n = (Station number* − 1) × 4
4 stations occupied 1 time	n = (Station number* − 1) × 4
4 stations occupied 2 times	n = (Station number* − 1) × 8
4 stations occupied 4 times	n = (Station number* − 1) × 16

* Station number when there is one occupied station: 1 to 64 (each number can be set)
Station number when there are four occupied stations: 1 to 61 (four stations are occupied for each station number, and thus only numbers that are increments of four can be set: 1, 5, 9 …61)

As the calculation result is expressed in decimal number it is converted to hexadecimal number before substituted for "n" in the table.

Example: When the COM-MC is set to 4 stations occupied 1 time and its station number is "5."
n = (5 − 1) × 4 = 16 (Decimal number) → 10 (Hexadecimal number)

For station number 5: Remote registers RWrn to RWrn+F → RWr10 to RWr1F
RWwn to RWwn+F → RWw10 to RWw1F

■ When the number of occupied station/extended cyclic settings are different

If the network consists of COM-MC modules with differing "number of occupied station/extended cyclic" settings, use for "n" the total of the number of assigned registers with station number lower than the module's own station in order from the lowest station number.

Number of occupied station/extended cyclic setting	Number of assigned registers
1 station occupied 1 time	4H (Hexadecimal number)
4 stations occupied 1 time	10H (Hexadecimal number)
4 stations occupied 2 times	20H (Hexadecimal number)
4 stations occupied 4 times	40H (Hexadecimal number)

Example: Calculation of "n" when the network consists of three COM-MC modules and the station numbers and "number of occupied station/extended cyclic" settings are as shown below.

1st module [Station number 1]: 4 stations occupied 2 times
n = 0 (No station numbers less than the module's own station, thus 0)
Remote registers RWrn to RWrn+1F → RWr0 to RWr1F
RWwn to RWwn+1F → RWw0 to RWw1F

2nd module [Station number 5]: 1 station occupied 1 time
n = 20 (The number of assigned registers of station 1)
Remote registers RWrn to RWrn+3 → RWr20 to RWr23
RWwn to RWwn+3 → RWw20 to RWw23

3rd module [Station number 6]: 4 stations occupied 1 time
n = 20 + 4 = 24 (Total number of assigned registers of station 1 and station 5)
Remote registers RWrn to RWrn+F → RWr24 to RWr33
RWwn to RWwn+F → RWw24 to RWw33

7.2.1 1 station occupied 1 time (1 channel assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 4 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	Measured value (PV)	Input scale low to Input scale high	—
RWrn+1			Manipulated output value (MV)	−5.0 to +105.0 %	—
RWrn+2			Unused	—	—
RWrn+3			For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5.	—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 4 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	Set value (SV)	Setting limiter low to Setting limiter high	0
RWwn+1			Event 1 set value	Deviation action, Deviation action between channels: −Input span to +Input span Process action, SV action: Input scale low to Input scale high Manipulated output value (MV): −5.0 to +105.0 %	50
RWwn+2			Event 2 set value		50
RWwn+3			For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB.	—

When the Set value (SV), Event 1 set value, or Event 2 set value assigned to the Remote register (RWw) as a fixed value is changed, operation of the Extension setting flag (setting update flag) is also necessary. For details, see ■ **Extension number for setting selection processing (P. 36).**

7.2.2 1 station occupied 1 time (2 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 4 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	Measured value (PV)	Input scale low to Input scale high	—
RWrn+1		CH2	Measured value (PV)		—
RWrn+2		CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5.	—
RWrn+3		CH2	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 4 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	Set value (SV)	Setting limiter low to Setting limiter high	0
RWwn+1		CH2	Set value (SV)		0
RWwn+2		CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB.	—
RWwn+3		CH2	For extended area setting		—

When the Set value (SV) assigned to the Remote register (RWw) as a fixed value is changed, operation of the Extension setting flag (setting update flag) is also necessary.
For details, see ■ **Extension number for setting selection processing (P. 36).**

7.2.3 4 stations occupied 1 time (8 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 16 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	Measured value (PV)	Input scale low to Input scale high	—
RWrn+1		CH2	Measured value (PV)		—
RWrn+2		CH3	Measured value (PV)		—
RWrn+3		CH4	Measured value (PV)		—
RWrn+4	2nd module	CH5	Measured value (PV)		—
RWrn+5		CH6	Measured value (PV)		—
RWrn+6		CH7	Measured value (PV)		—
RWrn+7		CH8	Measured value (PV)		—
RWrn+8	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+9		CH2	For extended area display		—
RWrn+A		CH3	For extended area display		—
RWrn+B		CH4	For extended area display		—
RWrn+C	2nd module	CH5	For extended area display		—
RWrn+D		CH6	For extended area display		—
RWrn+E		CH7	For extended area display		—
RWrn+F		CH8	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 16 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	Set value (SV)	Setting limiter low to Setting limiter high	0
RWwn+1		CH2	Set value (SV)		0
RWwn+2		CH3	Set value (SV)		0
RWwn+3		CH4	Set value (SV)		0
RWwn+4	2nd module	CH5	Set value (SV)		0
RWwn+5		CH6	Set value (SV)		0
RWwn+6		CH7	Set value (SV)		0
RWwn+7		CH8	Set value (SV)		0
RWwn+8	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+9		CH2	For extended area setting		—
RWwn+A		CH3	For extended area setting		—
RWwn+B		CH4	For extended area setting		—
RWwn+C	2nd module	CH5	For extended area setting		—
RWwn+D		CH6	For extended area setting		—
RWwn+E		CH7	For extended area setting		—
RWwn+F		CH8	For extended area setting		—

When the Set value (SV) assigned to the Remote register (RWw) as a fixed value is changed, operation of the Extension setting flag (setting update flag) is also necessary.
For details, see ■ **Extension number for setting selection processing (P. 36).**

7.2.4 4 stations occupied 1 time (16 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 16 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+1		CH2	For extended area display		—
RWrn+2		CH3	For extended area display		—
RWrn+3		CH4	For extended area display		—
RWrn+4	2nd module	CH5	For extended area display		—
RWrn+5		CH6	For extended area display		—
RWrn+6		CH7	For extended area display		—
RWrn+7		CH8	For extended area display		—
RWrn+8	3rd module	CH9	For extended area display		—
RWrn+9		CH10	For extended area display		—
RWrn+A		CH11	For extended area display		—
RWrn+B		CH12	For extended area display		—
RWrn+C	4th module	CH13	For extended area display		—
RWrn+D		CH14	For extended area display		—
RWrn+E		CH15	For extended area display		—
RWrn+F		CH16	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 16 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+1		CH2	For extended area setting		—
RWwn+2		CH3	For extended area setting		—
RWwn+3		CH4	For extended area setting		—
RWwn+4	2nd module	CH5	For extended area setting		—
RWwn+5		CH6	For extended area setting		—
RWwn+6		CH7	For extended area setting		—
RWwn+7		CH8	For extended area setting		—
RWwn+8	3rd module	CH9	For extended area setting		—
RWwn+9		CH10	For extended area setting		—
RWwn+A		CH11	For extended area setting		—
RWwn+B		CH12	For extended area setting		—
RWwn+C	4th module	CH13	For extended area setting		—
RWwn+D		CH14	For extended area setting		—
RWwn+E		CH15	For extended area setting		—
RWwn+F		CH16	For extended area setting		—

7.2.5 4 stations occupied 2 times (16 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 32 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	Measured value (PV)	Input scale low to Input scale high	—
RWrn+1		CH2	Measured value (PV)		—
RWrn+2		CH3	Measured value (PV)		—
RWrn+3		CH4	Measured value (PV)		—
RWrn+4	2nd module	CH5	Measured value (PV)		—
RWrn+5		CH6	Measured value (PV)		—
RWrn+6		CH7	Measured value (PV)		—
RWrn+7		CH8	Measured value (PV)		—
RWrn+8	3rd module	CH9	Measured value (PV)		—
RWrn+9		CH10	Measured value (PV)		—
RWrn+A		CH11	Measured value (PV)		—
RWrn+B		CH12	Measured value (PV)		—
RWrn+C	4th module	CH13	Measured value (PV)		—
RWrn+D		CH14	Measured value (PV)		—
RWrn+E		CH15	Measured value (PV)		—
RWrn+F		CH16	Measured value (PV)		—
RWrn+10	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+11		CH2	For extended area display		—
RWrn+12		CH3	For extended area display		—
RWrn+13		CH4	For extended area display		—
RWrn+14	2nd module	CH5	For extended area display		—
RWrn+15		CH6	For extended area display		—
RWrn+16		CH7	For extended area display		—
RWrn+17		CH8	For extended area display		—
RWrn+18	3rd module	CH9	For extended area display		—
RWrn+19		CH10	For extended area display		—
RWrn+1A		CH11	For extended area display		—
RWrn+1B		CH12	For extended area display		—
RWrn+1C	4th module	CH13	For extended area display		—
RWrn+1D		CH14	For extended area display		—
RWrn+1E		CH15	For extended area display		—
RWrn+1F		CH16	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 32 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	Set value (SV)	Setting limiter low to Setting limiter high	0
RWwn+1		CH2	Set value (SV)		0
RWwn+2		CH3	Set value (SV)		0
RWwn+3		CH4	Set value (SV)		0
RWwn+4	2nd module	CH5	Set value (SV)		0
RWwn+5		CH6	Set value (SV)		0
RWwn+6		CH7	Set value (SV)		0
RWwn+7		CH8	Set value (SV)		0
RWwn+8	3rd module	CH9	Set value (SV)		0
RWwn+9		CH10	Set value (SV)		0
RWwn+A		CH11	Set value (SV)		0
RWwn+B		CH12	Set value (SV)		0
RWwn+C	4th module	CH13	Set value (SV)		0
RWwn+D		CH14	Set value (SV)		0
RWwn+E		CH15	Set value (SV)		0
RWwn+F		CH16	Set value (SV)		0
RWwn+10	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+11		CH2	For extended area setting		—
RWwn+12		CH3	For extended area setting		—
RWwn+13		CH4	For extended area setting		—
RWwn+14	2nd module	CH5	For extended area setting		—
RWwn+15		CH6	For extended area setting		—
RWwn+16		CH7	For extended area setting		—
RWwn+17		CH8	For extended area setting		—
RWwn+18	3rd module	CH9	For extended area setting		—
RWwn+19		CH10	For extended area setting		—
RWwn+1A		CH11	For extended area setting		—
RWwn+1B		CH12	For extended area setting		—
RWwn+1C	4th module	CH13	For extended area setting		—
RWwn+1D		CH14	For extended area setting		—
RWwn+1E		CH15	For extended area setting		—
RWwn+1F		CH16	For extended area setting		—

When the Set value (SV) assigned to the Remote register (RWw) as a fixed value is changed, operation of the Extension setting flag (setting update flag) is also necessary.
For details, see ■ **Extension number for setting selection processing (P. 36).**

7.2.6 4 stations occupied 2 times (32 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 32 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+1		CH2	For extended area display		—
RWrn+2		CH3	For extended area display		—
RWrn+3		CH4	For extended area display		—
RWrn+4	2nd module	CH5	For extended area display		—
RWrn+5		CH6	For extended area display		—
RWrn+6		CH7	For extended area display		—
RWrn+7		CH8	For extended area display		—
RWrn+8	3rd module	CH9	For extended area display		—
RWrn+9		CH10	For extended area display		—
RWrn+A		CH11	For extended area display		—
RWrn+B		CH12	For extended area display		—
RWrn+C	4th module	CH13	For extended area display		—
RWrn+D		CH14	For extended area display		—
RWrn+E		CH15	For extended area display		—
RWrn+F		CH16	For extended area display		—
RWrn+10	5th module	CH17	For extended area display		—
RWrn+11		CH18	For extended area display		—
RWrn+12		CH19	For extended area display		—
RWrn+13		CH20	For extended area display		—
RWrn+14	6th module	CH21	For extended area display		—
RWrn+15		CH22	For extended area display		—
RWrn+16		CH23	For extended area display		—
RWrn+17		CH24	For extended area display		—
RWrn+18	7th module	CH25	For extended area display		—
RWrn+19		CH26	For extended area display		—
RWrn+1A		CH27	For extended area display		—
RWrn+1B		CH28	For extended area display		—
RWrn+1C	8th module	CH29	For extended area display		—
RWrn+1D		CH30	For extended area display		—
RWrn+1E		CH31	For extended area display		—
RWrn+1F		CH32	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 32 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+1		CH2	For extended area setting		—
RWwn+2		CH3	For extended area setting		—
RWwn+3		CH4	For extended area setting		—
RWwn+4	2nd module	CH5	For extended area setting		—
RWwn+5		CH6	For extended area setting		—
RWwn+6		CH7	For extended area setting		—
RWwn+7		CH8	For extended area setting		—
RWwn+8	3rd module	CH9	For extended area setting		—
RWwn+9		CH10	For extended area setting		—
RWwn+A		CH11	For extended area setting		—
RWwn+B		CH12	For extended area setting		—
RWwn+C	4th module	CH13	For extended area setting		—
RWwn+D		CH14	For extended area setting		—
RWwn+E		CH15	For extended area setting		—
RWwn+F		CH16	For extended area setting		—
RWwn+10	5th module	CH17	For extended area setting		—
RWwn+11		CH18	For extended area setting		—
RWwn+12		CH19	For extended area setting		—
RWwn+13		CH20	For extended area setting		—
RWwn+14	6th module	CH21	For extended area setting		—
RWwn+15		CH22	For extended area setting		—
RWwn+16		CH23	For extended area setting		—
RWwn+17		CH24	For extended area setting		—
RWwn+18	7th module	CH25	For extended area setting		—
RWwn+19		CH26	For extended area setting		—
RWwn+1A		CH27	For extended area setting		—
RWwn+1B		CH28	For extended area setting		—
RWwn+1C	8th module	CH29	For extended area setting		—
RWwn+1D		CH30	For extended area setting		—
RWwn+1E		CH31	For extended area setting		—
RWwn+1F		CH32	For extended area setting		—

7.2.7 4 stations occupied 4 times (32 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 64 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	Measured value (PV)	Input scale low to Input scale high	—
RWrn+1		CH2	Measured value (PV)		—
RWrn+2		CH3	Measured value (PV)		—
RWrn+3		CH4	Measured value (PV)		—
RWrn+4	2nd module	CH5	Measured value (PV)		—
RWrn+5		CH6	Measured value (PV)		—
RWrn+6		CH7	Measured value (PV)		—
RWrn+7		CH8	Measured value (PV)		—
RWrn+8	3rd module	CH9	Measured value (PV)		—
RWrn+9		CH10	Measured value (PV)		—
RWrn+A		CH11	Measured value (PV)		—
RWrn+B		CH12	Measured value (PV)		—
RWrn+C	4th module	CH13	Measured value (PV)		—
RWrn+D		CH14	Measured value (PV)		—
RWrn+E		CH15	Measured value (PV)		—
RWrn+F		CH16	Measured value (PV)		—
RWrn+10	5th module	CH17	Measured value (PV)		—
RWrn+11		CH18	Measured value (PV)		—
RWrn+12		CH19	Measured value (PV)		—
RWrn+13		CH20	Measured value (PV)		—
RWrn+14	6th module	CH21	Measured value (PV)		—
RWrn+15		CH22	Measured value (PV)		—
RWrn+16		CH23	Measured value (PV)		—
RWrn+17		CH24	Measured value (PV)		—
RWrn+18	7th module	CH25	Measured value (PV)		—
RWrn+19		CH26	Measured value (PV)		—
RWrn+1A		CH27	Measured value (PV)		—
RWrn+1B		CH28	Measured value (PV)		—
RWrn+1C	8th module	CH29	Measured value (PV)		—
RWrn+1D		CH30	Measured value (PV)		—
RWrn+1E		CH31	Measured value (PV)		—
RWrn+1F		CH32	Measured value (PV)		—
RWrn+20	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+21		CH2	For extended area display		—
RWrn+22		CH3	For extended area display		—
RWrn+23		CH4	For extended area display		—
RWrn+24	2nd module	CH5	For extended area display		—
RWrn+25		CH6	For extended area display		—
RWrn+26		CH7	For extended area display		—
RWrn+27		CH8	For extended area display		—
RWrn+28	3rd module	CH9	For extended area display		—
RWrn+29		CH10	For extended area display		—
RWrn+2A		CH11	For extended area display		—

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Address	Communication item			Data range	Factory set value
RWrn+2B	3rd module	CH12	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+2C	4th module	CH13	For extended area display		—
RWrn+2D		CH14	For extended area display		—
RWrn+2E		CH15	For extended area display		—
RWrn+2F		CH16	For extended area display		—
RWrn+30	5th module	CH17	For extended area display		—
RWrn+31		CH18	For extended area display		—
RWrn+32		CH19	For extended area display		—
RWrn+33		CH20	For extended area display		—
RWrn+34	6th module	CH21	For extended area display		—
RWrn+35		CH22	For extended area display		—
RWrn+36		CH23	For extended area display		—
RWrn+37		CH24	For extended area display		—
RWrn+38	7th module	CH25	For extended area display		—
RWrn+39		CH26	For extended area display		—
RWrn+3A		CH27	For extended area display		—
RWrn+3B		CH28	For extended area display		—
RWrn+3C	8th module	CH29	For extended area display		—
RWrn+3D		CH30	For extended area display		—
RWrn+3E		CH31	For extended area display		—
RWrn+3F		CH32	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 64 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	Set value (SV)	Setting limiter low to Setting limiter high	0
RWwn+1		CH2	Set value (SV)		0
RWwn+2		CH3	Set value (SV)		0
RWwn+3		CH4	Set value (SV)		0
RWwn+4	2nd module	CH5	Set value (SV)		0
RWwn+5		CH6	Set value (SV)		0
RWwn+6		CH7	Set value (SV)		0
RWwn+7		CH8	Set value (SV)		0
RWwn+8	3rd module	CH9	Set value (SV)		0
RWwn+9		CH10	Set value (SV)		0
RWwn+A		CH11	Set value (SV)		0
RWwn+B		CH12	Set value (SV)		0
RWwn+C	4th module	CH13	Set value (SV)		0
RWwn+D		CH14	Set value (SV)		0
RWwn+E		CH15	Set value (SV)		0
RWwn+F		CH16	Set value (SV)		0
RWwn+10	5th module	CH17	Set value (SV)		0
RWwn+11		CH18	Set value (SV)		0
RWwn+12		CH19	Set value (SV)		0
RWwn+13		CH20	Set value (SV)		0
RWwn+14	6th module	CH21	Set value (SV)		0
RWwn+15		CH22	Set value (SV)		0
RWwn+16		CH23	Set value (SV)		0
RWwn+17		CH24	Set value (SV)		0
RWwn+18	7th module	CH25	Set value (SV)		0
RWwn+19		CH26	Set value (SV)		0
RWwn+1A		CH27	Set value (SV)		0
RWwn+1B		CH28	Set value (SV)		0
RWwn+1C	8th module	CH29	Set value (SV)		0
RWwn+1D		CH30	Set value (SV)		0
RWwn+1E		CH31	Set value (SV)		0
RWwn+1F		CH32	Set value (SV)		0
RWwn+20	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+21		CH2	For extended area setting		—
RWwn+22		CH3	For extended area setting		—
RWwn+23		CH4	For extended area setting		—
RWwn+24	2nd module	CH5	For extended area setting		—
RWwn+25		CH6	For extended area setting		—
RWwn+26		CH7	For extended area setting		—
RWwn+27		CH8	For extended area setting		—
RWwn+28	3rd module	CH9	For extended area setting		—
RWwn+29		CH10	For extended area setting		—
RWwn+2A		CH11	For extended area setting		—

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Address	Communication item			Data range	Factory set value
RWwn+2B	3rd module	CH12	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+2C	4th module	CH13	For extended area setting		—
RWwn+2D		CH14	For extended area setting		—
RWwn+2E		CH15	For extended area setting		—
RWwn+2F		CH16	For extended area setting		—
RWwn+30	5th module	CH17	For extended area setting		—
RWwn+31		CH18	For extended area setting		—
RWwn+32		CH19	For extended area setting		—
RWwn+33		CH20	For extended area setting		—
RWwn+34	6th module	CH21	For extended area setting		—
RWwn+35		CH22	For extended area setting		—
RWwn+36		CH23	For extended area setting		—
RWwn+37		CH24	For extended area setting		—
RWwn+38	7th module	CH25	For extended area setting		—
RWwn+39		CH26	For extended area setting		—
RWwn+3A		CH27	For extended area setting		—
RWwn+3B		CH28	For extended area setting		—
RWwn+3C	8th module	CH29	For extended area setting		—
RWwn+3D		CH30	For extended area setting		—
RWwn+3E		CH31	For extended area setting		—
RWwn+3F		CH32	For extended area setting		—

7.2.8 4 stations occupied 4 times (64 channels assignment)

■ Remote register (RWr)

Data direction: COM-MC (Remote device station) → Master station (PLC)
Data capacity: 64 words

Address	Communication item			Data range	Factory set value
RWrn	1st module	CH1	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+1		CH2	For extended area display		—
RWrn+2		CH3	For extended area display		—
RWrn+3		CH4	For extended area display		—
RWrn+4	2nd module	CH5	For extended area display		—
RWrn+5		CH6	For extended area display		—
RWrn+6		CH7	For extended area display		—
RWrn+7		CH8	For extended area display		—
RWrn+8	3rd module	CH9	For extended area display		—
RWrn+9		CH10	For extended area display		—
RWrn+A		CH11	For extended area display		—
RWrn+B		CH12	For extended area display		—
RWrn+C	4th module	CH13	For extended area display		—
RWrn+D		CH14	For extended area display		—
RWrn+E		CH15	For extended area display		—
RWrn+F		CH16	For extended area display		—
RWrn+10	5th module	CH17	For extended area display		—
RWrn+11		CH18	For extended area display		—
RWrn+12		CH19	For extended area display		—
RWrn+13		CH20	For extended area display		—
RWrn+14	6th module	CH21	For extended area display		—
RWrn+15		CH22	For extended area display		—
RWrn+16		CH23	For extended area display		—
RWrn+17		CH24	For extended area display		—
RWrn+18	7th module	CH25	For extended area display		—
RWrn+19		CH26	For extended area display		—
RWrn+1A		CH27	For extended area display		—
RWrn+1B		CH28	For extended area display		—
RWrn+1C	8th module	CH29	For extended area display		—
RWrn+1D		CH30	For extended area display		—
RWrn+1E		CH31	For extended area display		—
RWrn+1F		CH32	For extended area display		—
RWrn+20	9th module	CH33	For extended area display		—
RWrn+21		CH34	For extended area display		—
RWrn+22		CH35	For extended area display		—
RWrn+23		CH36	For extended area display		—
RWrn+24	10th module	CH37	For extended area display		—
RWrn+25		CH38	For extended area display		—
RWrn+26		CH39	For extended area display		—
RWrn+27		CH40	For extended area display		—
RWrn+28	11th module	CH41	For extended area display		—
RWrn+29		CH42	For extended area display		—
RWrn+2A		CH43	For extended area display		—

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Address	Communication item			Data range	Factory set value
RWrn+2B	11th module	CH44	For extended area display	Data corresponding to the extension number specified by setting the display extension number from RYn0 to RYn5 and from RY(n+1)0 to RY(n+1)2.	—
RWrn+2C	12th module	CH45	For extended area display		—
RWrn+2D		CH46	For extended area display		—
RWrn+2E		CH47	For extended area display		—
RWrn+2F		CH48	For extended area display		—
RWrn+30	13th module	CH49	For extended area display		—
RWrn+31		CH50	For extended area display		—
RWrn+32		CH51	For extended area display		—
RWrn+33		CH52	For extended area display		—
RWrn+34	14th module	CH53	For extended area display		—
RWrn+35		CH54	For extended area display		—
RWrn+36		CH55	For extended area display		—
RWrn+37		CH56	For extended area display		—
RWrn+38	15th module	CH57	For extended area display		—
RWrn+39		CH58	For extended area display		—
RWrn+3A		CH59	For extended area display		—
RWrn+3B		CH60	For extended area display		—
RWrn+3C	16th module	CH61	For extended area display		—
RWrn+3D		CH62	For extended area display		—
RWrn+3E		CH63	For extended area display		—
RWrn+3F		CH64	For extended area display		—

■ Remote register (RWw)

Data direction: Master station (PLC) → COM-MC (Remote device station)
Data capacity: 64 words

Address	Communication item			Data range	Factory set value
RWwn	1st module	CH1	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+1		CH2	For extended area setting		—
RWwn+2		CH3	For extended area setting		—
RWwn+3		CH4	For extended area setting		—
RWwn+4	2nd module	CH5	For extended area setting		—
RWwn+5		CH6	For extended area setting		—
RWwn+6		CH7	For extended area setting		—
RWwn+7		CH8	For extended area setting		—
RWwn+8	3rd module	CH9	For extended area setting		—
RWwn+9		CH10	For extended area setting		—
RWwn+A		CH11	For extended area setting		—
RWwn+B		CH12	For extended area setting		—
RWwn+C	4th module	CH13	For extended area setting		—
RWwn+D		CH14	For extended area setting		—
RWwn+E		CH15	For extended area setting		—
RWwn+F		CH16	For extended area setting		—
RWwn+10	5th module	CH17	For extended area setting		—
RWwn+11		CH18	For extended area setting		—
RWwn+12		CH19	For extended area setting		—
RWwn+13		CH20	For extended area setting		—
RWwn+14	6th module	CH21	For extended area setting		—
RWwn+15		CH22	For extended area setting		—
RWwn+16		CH23	For extended area setting		—
RWwn+17		CH24	For extended area setting		—
RWwn+18	7th module	CH25	For extended area setting		—
RWwn+19		CH26	For extended area setting		—
RWwn+1A		CH27	For extended area setting		—
RWwn+1B		CH28	For extended area setting		—
RWwn+1C	8th module	CH29	For extended area setting		—
RWwn+1D		CH30	For extended area setting		—
RWwn+1E		CH31	For extended area setting		—
RWwn+1F		CH32	For extended area setting		—
RWwn+20	9th module	CH33	For extended area setting		—
RWwn+21		CH34	For extended area setting		—
RWwn+22		CH35	For extended area setting		—
RWwn+23		CH36	For extended area setting		—
RWwn+24	10th module	CH37	For extended area setting		—
RWwn+25		CH38	For extended area setting		—
RWwn+26		CH39	For extended area setting		—
RWwn+27		CH40	For extended area setting		—
RWwn+28	11th module	CH41	For extended area setting		—
RWwn+29		CH42	For extended area setting		—
RWwn+2A		CH43	For extended area setting		—

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Address	Communication item			Data range	Factory set value
RWwn+2B	11th module	CH44	For extended area setting	Data corresponding to the extension number specified by setting the setting extension number from RYn6 to RYnB and from RY(n+1)8 to RY(n+1)A.	—
RWwn+2C	12th module	CH45	For extended area setting		—
RWwn+2D		CH46	For extended area setting		—
RWwn+2E		CH47	For extended area setting		—
RWwn+2F		CH48	For extended area setting		—
RWwn+30	13th module	CH49	For extended area setting		—
RWwn+31		CH50	For extended area setting		—
RWwn+32		CH51	For extended area setting		—
RWwn+33		CH52	For extended area setting		—
RWwn+34	14th module	CH53	For extended area setting		—
RWwn+35		CH54	For extended area setting		—
RWwn+36		CH55	For extended area setting		—
RWwn+37		CH56	For extended area setting		—
RWwn+38	15th module	CH57	For extended area setting		—
RWwn+39		CH58	For extended area setting		—
RWwn+3A		CH59	For extended area setting		—
RWwn+3B		CH60	For extended area setting		—
RWwn+3C	16th module	CH61	For extended area setting		—
RWwn+3D		CH62	For extended area setting		—
RWwn+3E		CH63	For extended area setting		—
RWwn+3F		CH64	For extended area setting		—

7.3 Extension Number

Communication items which are handled in the extension areas of the remote registers (RWr and RWw) are specified by the extension number, If the necessary data is selected from a list of extension numbers and that extension number is set by Remote output, the data can be handled in the remote registers (RWr and RWw).
In addition, communication item corresponding to memory area function specifies memory area number to use in remote register extension area for area number. Extension number and area number set in ON/OFF of Remote output.

☞ For Remote output, see **7.1 Remote Input/Output (P. 41)**.
☞ For Remote register, see **7.2 Remote Register (P. 68)**.
☞ Refer to the following manual for the data range of the communication items with the extension number and the memory area function.
• SRZ Instruction Manual (IMR01T04-E□)

■ When reading data

● Setting of extension number for display

Extension number for display sets it with Remote output "RYn0 to RYn5 and RY(n+1)0 to RY(n+1)2."

Bit image

RY(n+1)2	RY(n+1)1	RY(n+1)0	RYn5	RYn4	RYn3	RYn2	RYn1	RYn0
Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0

Bit data: 0: OFF 1: ON [Decimal number: 0 to 511]

📖 For the 1 station occupied 1 time setting, setting range of extension number becomes RYn0 to RYn5 [Decimal number: 0 to 63].

● Setting of area number for display

Area number for display sets it with Remote output "RY(n+2)0 to RY(n+2)3."

Bit image

RY(n+2)3	RY(n+2)2	RY(n+2)1	RY(n+2)0
Bit 3	Bit 2	Bit 1	Bit 0

Bit data: 0: OFF 1: ON [Decimal number: 0 to 16 (0, 9 to 16: Control area)]

📖 For 1 station occupied 1 time setting, cannot do an assignment of area number.
Become communication item of a control area.

■ When writing data

● Setting of extension number for setting

Extension number for setting sets it with Remote output "RYn6 to RYnB and RY(n+1)8 to RY(n+1)A."

Bit image

RY(n+1)A	RY(n+1)9	RY(n+1)8	RYnB	RYnA	RYn9	RYn8	RYn7	RYn6
Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0

Bit data: 0: OFF 1: ON [Decimal number: 0 to 511]

For the 1 station occupied 1 time setting, setting range of extension number becomes RYn6 to RYnB [Decimal number: 0 to 63].

● Setting of area number for setting

Area number for setting sets it with Remote output "RY(n+2)8 to RY(n+2)B."

Bit image

RY(n+2)B	RY(n+2)A	RY(n+2)9	RY(n+2)8
Bit 3	Bit 2	Bit 1	Bit 0

Bit data: 0: OFF 1: ON [Decimal number: 0 to 16 (0, 9 to 16: Control area)]

For 1 station occupied 1 time setting, cannot do an assignment of area number. Become communication item of a control area.

[Example] When setting extension number for setting to "3," and set area number for setting to "5."
Number of Occupied station/Extended cyclic setting: 4 stations occupied 1 time

- **Setting of extension number for setting**

Extension number 3: Set value (SV) →

Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	0	0	0	1	1

↓

RY(n+1)A	RY(n+1)9	RY(n+1)8	RYnB	RYnA	RYn9	RYn8	RYn7	RYn6
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

Bit data: 0: OFF 1: ON

- **Setting of area number for setting**

Memory area number 5 →

Bit 3	Bit 2	Bit 1	Bit 0
0	1	0	1

↓

RY(n+2)B	RY(n+2)A	RY(n+2)9	RY(n+2)8
OFF	ON	OFF	ON

Bit data: 0: OFF 1: ON

■ Extension number list

Attribute:
RO: Read only data [Remote device station (COM-MC) → Master station (PLC)]
R/W: Read and Write data [Remote device station (COM-MC) ↔ Master station (PLC)]
**: Read: Zero is displayed (Extension display works properly)
Write: Not reflected (Extension setting works properly)

Correspondence module and occupation CH:
Module types corresponding to each communication item and number of occupied channels per module

★: Data related multi-memory area function

♣: When Heat/Cool PID control or Position proportioning PID control is performed, the 2nd channel and 4th channel of Z-TIO module are invalid communication data.
[Read is possible (0 is shown), but the result of Write is disregarded.]

☞ Refer to the following manuals for the data range of each communication item.
• **SRZ Instruction Manual (IMR01T04-E□)**

Extension number	Communication item	Attribute	Correspondence module and occupation CH
0	Measured value (PV)	RO	Z-TIO: 4
1	Manipulated output value (MV) monitor [heat-side] ♣	RO	Z-TIO: 4
2	Current transformer (CT) input value monitor	RO	Z-TIO: 4
3	Set value (SV) ★	R/W	Z-TIO: 4
4	PID/AT transfer *	R/W	Z-TIO: 4
5	Proportional band [heat-side] ★♣	R/W	Z-TIO: 4
6	Integral time [heat-side] ★♣	R/W	Z-TIO: 4
7	Derivative time [heat-side] ★♣	R/W	Z-TIO: 4
8	PV bias	R/W	Z-TIO: 4
9	Event 1 set value ★	R/W	Z-TIO: 4
10	Event 2 set value ★	R/W	Z-TIO: 4
11 ⋮ 15	Reserved	—	—
16	Unused	— **	—
17	RUN/STOP transfer	R/W	Z-TIO: 1 Z-DIO: 1
18	Proportional cycle time	R/W	Z-TIO: 4
19	Auto/Manual transfer	R/W	Z-TIO: 4
20	Manual manipulated output value ♣	R/W	Z-TIO: 4
21	Setting limiter high	R/W	Z-TIO: 4
22	Setting limiter low	R/W	Z-TIO: 4
23	PV digital filter	R/W	Z-TIO: 4
24	Heater break alarm (HBA) set value	R/W	Z-TIO: 4
25	Decimal point position	R/W	Z-TIO: 4
26	Manipulated output value (MV) monitor [cool-side] ♣	RO	Z-TIO: 4
27	Proportional band [cool-side] ★♣	R/W	Z-TIO: 4
28	Unused	— **	—

* For the operation, see the **6.2 CC-Link Flag Operation (P. 34).**

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
29	Overlap/Deadband ★♣	R/W	Z-TIO: 4
30	Operation mode	R/W	Z-TIO: 4
31	Set value (SV) monitor	RO	Z-TIO: 4
32	Error code	RO	Z-TIO: 1 Z-DIO: 1
33	Memory area transfer	R/W	Z-TIO: 4
34	Control response parameter ★♣	R/W	Z-TIO: 4
35	Unused	— **	—
36	Input type	R/W	Z-TIO: 4
37	Setting change rate limiter (up) ★	R/W	Z-TIO: 4
38	Control action	R/W	Z-TIO: 4
39	Event 1 type	R/W	Z-TIO: 4
40	Event 2 type	R/W	Z-TIO: 4
41	Event 1 differential gap	R/W	Z-TIO: 4
42	Event 2 differential gap	R/W	Z-TIO: 4
43	Event 1 hold action	R/W	Z-TIO: 4
44	Event 2 hold action	R/W	Z-TIO: 4
45	Unused	— **	—
46	Output limiter high [heat-side] ♣	R/W	Z-TIO: 4
47	Output limiter low [heat-side] ♣	R/W	Z-TIO: 4
48	Unused	— **	—
49			
50	Control loop break alarm (LBA) time ★	R/W	Z-TIO: 4
51	LBA deadband ★	R/W	Z-TIO: 4
52	Unused	— **	—
53			
54	Event 3 set value ★	R/W	Z-TIO: 4
55	Event 4 set value ★	R/W	Z-TIO: 4
56	Event 3 type	R/W	Z-TIO: 4
57	Event 4 type	R/W	Z-TIO: 4
58	Event 3 differential gap	R/W	Z-TIO: 4
59	Event 4 differential gap	R/W	Z-TIO: 4
60	Event 3 hold action	R/W	Z-TIO: 4
61	Event 4 hold action	R/W	Z-TIO: 4
62	Setting change rate limiter (down) ★	R/W	Z-TIO: 4
63	Comprehensive event state	RO	Z-TIO: 4
64	Remote setting (RS) input value monitor	RO	Z-TIO: 4
65 ⋮ 67	Unused	— **	—
68	Memory area soak time monitor	RO	Z-TIO: 4
69	Digital input (DI) state monitor	RO	Z-DIO: 1
70	Operation mode state monitor	RO	Z-TIO: 4

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
71	Unused	— **	—
72			
73	Digital output (DO) state	RO	Z-DIO: 1
74	Output state monitor	RO	Z-TIO: 1
75 to 89	Unused	— **	—
90	Remote/Local transfer	R/W	Z-TIO: 4
91	Unused	— **	—
92	Interlock release	R/W	Z-TIO: 4
93	Communication switch for logic	R/W	Z-TIO: 1
94	DO manual output	R/W	Z-DIO: 1
95 to 109	Unused	— **	—
110	Link area number ★	R/W	Z-TIO: 4
111	Area soak time ★	R/W	Z-TIO: 4
112	Integral time [cool-side] ★♣	R/W	Z-TIO: 4
113	Derivative time [cool-side] ★♣	R/W	Z-TIO: 4
114 to 127	Unused	— **	—
128	Manual reset ★	R/W	Z-TIO: 4
129	Area soak time stop function	R/W	Z-TIO: 4
130	Minimum ON/OFF time of proportioning cycle	R/W	Z-TIO: 4
131	DO minimum ON/OFF time of proportional cycle	R/W	Z-DIO: 8
132	DO proportional cycle time	R/W	Z-DIO: 8
133 to 139	Unused	— **	—
140	Heater break determination point	R/W	Z-TIO: 4
141	Heater melting determination point	R/W	Z-TIO: 4
142	PV ratio	R/W	Z-TIO: 4
143	PV low input cut-off	R/W	Z-TIO: 4
144	Unused	— **	—
145			
146	Backup memory state monitor	RO	Z-TIO: 1 Z-DIO: 1
147	Logic output monitor	RO	Z-TIO: 1
148	RS bias Cascade control: Cascade bias Ratio setting: Ratio setting bias	R/W	Z-TIO: 4

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
149	RS digital filter Cascade control: Cascade digital filter Ratio setting: Ratio setting digital filter	R/W	Z-TIO: 4
150	RS ratio Cascade control: Cascade ratio Ratio setting: Ratio setting ratio	R/W	Z-TIO: 4
151 ⋮ 153	Unused	— **	—
154	Output distribution selection	R/W	Z-TIO: 4
155	Output distribution bias	R/W	Z-TIO: 4
156	Output distribution ratio	R/W	Z-TIO: 4
157	DO output distribution selection	R/W	Z-DIO: 8
158	DO output distribution bias	R/W	Z-DIO: 8
159	DO output distribution ratio	R/W	Z-DIO: 8
160	Display unit	R/W	Z-TIO: 4
161	Input scale high	R/W	Z-TIO: 4
162	Input scale low	R/W	Z-TIO: 4
163	Input error determination point (high)	R/W	Z-TIO: 4
164	Input error determination point (low)	R/W	Z-TIO: 4
165	Burnout direction	R/W	Z-TIO: 4
166	Square root extraction	R/W	Z-TIO: 4
167 ⋮ 170	Unused	— **	—
171	DI function assignment	R/W	Z-DIO: 1
172 ⋮ 179	Unused	— **	—
180	Output assignment (Logic output selection function)	R/W	Z-TIO: 4
181 ⋮ 185	Unused	— **	—
186	Energized/De-energized (Logic output selection function)	R/W	Z-TIO: 4
187 ⋮ 199	Unused	— **	—
200	Force ON of Event 1 action	R/W	Z-TIO: 4
201	Event 1 channel setting	R/W	Z-TIO: 4
202	Event 1 interlock	R/W	Z-TIO: 4
203	Event 1 delay timer	R/W	Z-TIO: 4
204	Force ON of Event 2 action	R/W	Z-TIO: 4
205	Event 2 channel setting	R/W	Z-TIO: 4

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
206	Event 2 interlock	R/W	Z-TIO: 4
207	Event 2 delay timer	R/W	Z-TIO: 4
208	Force ON of Event 3 action	R/W	Z-TIO: 4
209	Event 3 channel setting	R/W	Z-TIO: 4
210	Event 3 interlock	R/W	Z-TIO: 4
211	Event 3 delay timer	R/W	Z-TIO: 4
212	Force ON of Event 4 action	R/W	Z-TIO: 4
213	Event 4 channel setting	R/W	Z-TIO: 4
214	Event 4 interlock	R/W	Z-TIO: 4
215	Event 4 delay timer	R/W	Z-TIO: 4
216 ⋮ 219	Unused	— **	—
220	CT ratio	R/W	Z-TIO: 4
221	Heater break alarm (HBA) type	R/W	Z-TIO: 4
222	Number of heater break alarm (HBA) delay times	R/W	Z-TIO: 4
223	CT assignment	R/W	Z-TIO: 4
224 ⋮ 229	Unused	— **	—
230	Hot/Cold start	R/W	Z-TIO: 4
231 ⋮ 233	Unused	— **	—
234	SV tracking	R/W	Z-TIO: 4
235	MV transfer function [Action taken when changed to Manual mode from Auto mode]	R/W	Z-TIO: 4
236	Start determination point	R/W	Z-TIO: 4
237	Unused	— **	—
238			
239	PV transfer function	R/W	Z-TIO: 4
240	Integral/Derivative time decimal point position ♣	R/W	Z-TIO: 4
241	Derivative gain ♣	R/W	Z-TIO: 4
242	ON/OFF action differential gap (upper)	R/W	Z-TIO: 4
243	ON/OFF action differential gap (lower)	R/W	Z-TIO: 4
244	Action (high) at input error	R/W	Z-TIO: 4
245	Action (low) at input error	R/W	Z-TIO: 4
246	Manipulated output value at input error	R/W	Z-TIO: 4
247	Output change rate limiter (up) [heat-side] ♣	R/W	Z-TIO: 4
248	Output change rate limiter (down) [heat-side] ♣	R/W	Z-TIO: 4
249	Unused	— **	—
250			

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
251	Derivative action ♣	R/W	Z-TIO: 4
252	Undershoot suppression factor ♣	R/W	Z-TIO: 4
253	Unused	— **	—
254	Output limiter high [cool-side] ♣	R/W	Z-TIO: 4
255	Output limiter low [cool-side] ♣	R/W	Z-TIO: 4
256	Output change rate limiter (up) [cool-side] ♣	R/W	Z-TIO: 4
257	Output change rate limiter (down) [cool-side] ♣	R/W	Z-TIO: 4
258	Manipulated output value at STOP mode [heat-side] ♣	R/W	Z-TIO: 4
259	Manipulated output value at STOP mode [cool-side] ♣	R/W	Z-TIO: 4
260	Action at feedback resistance (FBR) input break ♣	R/W	Z-TIO: 4
261	Unused	— **	—
262	Open/Close output neutral zone ♣	R/W	Z-TIO: 4
263	Unused	— **	—
264	Feedback adjustment ♣	R/W	Z-TIO: 4
265	Integrated output limiter ♣	R/W	Z-TIO: 4
266	Control motor time ♣	R/W	Z-TIO: 4
267	Valve action at STOP ♣	R/W	Z-TIO: 4
268	Unused	— **	—
269			
270	AT bias ♣	R/W	Z-TIO: 4
271	AT cycles ♣	R/W	Z-TIO: 4
272	AT differential gap time ♣	R/W	Z-TIO: 4
273	Output value with AT turned on ♣	R/W	Z-TIO: 4
274	Output value with AT turned off ♣	R/W	Z-TIO: 4
275	Proportional band adjusting factor [heat-side] ♣	R/W	Z-TIO: 4
276	Integral time adjusting factor [heat-side] ♣	R/W	Z-TIO: 4
277	Derivative time adjusting factor [heat-side] ♣	R/W	Z-TIO: 4
278	Proportional band adjusting factor [cool-side] ♣	R/W	Z-TIO: 4
279	Integral time adjusting factor [cool-side] ♣	R/W	Z-TIO: 4
280	Derivative time adjusting factor [cool-side] ♣	R/W	Z-TIO: 4
281	Proportional band limiter (high) [heat-side] ♣	R/W	Z-TIO: 4
282	Proportional band limiter (low) [heat-side] ♣	R/W	Z-TIO: 4
283	Integral time limiter (high) [heat-side] ♣	R/W	Z-TIO: 4
284	Integral time limiter (low) [heat-side] ♣	R/W	Z-TIO: 4
285	Derivative time limiter (high) [heat-side] ♣	R/W	Z-TIO: 4
286	Derivative time limiter (low) [heat-side] ♣	R/W	Z-TIO: 4
287	Proportional band limiter (high) [cool-side] ♣	R/W	Z-TIO: 4
288	Proportional band limiter (low) [cool-side] ♣	R/W	Z-TIO: 4
289	Integral time limiter (high) [cool-side] ♣	R/W	Z-TIO: 4
290	Integral time limiter (low) [cool-side] ♣	R/W	Z-TIO: 4
291	Derivative time limiter (high) [cool-side] ♣	R/W	Z-TIO: 4

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
292	Derivative time limiter (low) [cool-side] ♣	R/W	Z-TIO: 4
293 : 299	Unused	— **	—
300	Setting change rate limiter unit time	R/W	Z-TIO: 4
301	Soak time unit	R/W	Z-TIO: 4
302 : 340	Unused	— **	—
341	Integrated operating time monitor	RO	Z-TIO: 1 Z-DIO: 1
342	Holding peak value ambient temperature monitor	RO	Z-TIO: 4
343 : 349	Unused	— **	—
350	Startup tuning (ST)	R/W	Z-TIO: 4
351	ST proportional band adjusting factor	R/W	Z-TIO: 4
352	ST integral time adjusting factor	R/W	Z-TIO: 4
353	ST derivative time adjusting factor	R/W	Z-TIO: 4
354	ST start condition	R/W	Z-TIO: 4
355	Automatic temperature rise group	R/W	Z-TIO: 4
356	Automatic temperature rise learning	R/W	Z-TIO: 4
357	Automatic temperature rise dead time	R/W	Z-TIO: 4
358	Automatic temperature rise gradient data	R/W	Z-TIO: 4
359	Unused	— **	—
360	EDS mode (for disturbance 1)	R/W	Z-TIO: 4
361	EDS mode (for disturbance 2)	R/W	Z-TIO: 4
362	EDS value 1 (for disturbance 1)	R/W	Z-TIO: 4
363	EDS value 1 (for disturbance 2)	R/W	Z-TIO: 4
364	EDS value 2 (for disturbance 1)	R/W	Z-TIO: 4
365	EDS value 2 (for disturbance 2)	R/W	Z-TIO: 4
366	EDS transfer time (for disturbance 1)	R/W	Z-TIO: 4
367	EDS transfer time (for disturbance 2)	R/W	Z-TIO: 4
368	EDS action time (for disturbance 1)	R/W	Z-TIO: 4
369	EDS action time (for disturbance 2)	R/W	Z-TIO: 4
370	EDS action wait time (for disturbance 1)	R/W	Z-TIO: 4
371	EDS action wait time (for disturbance 2)	R/W	Z-TIO: 4
372	EDS value learning times	R/W	Z-TIO: 4
373	EDS start signal	R/W	Z-TIO: 4
374	EDS transfer time decimal point position	R/W	Z-TIO: 4
375	Output average processing time for EDS	R/W	Z-TIO: 4
376	Responsive action trigger point for EDS	R/W	Z-TIO: 4

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Extension number	Communication item	Attribute	Correspondence module and occupation CH
377	Operation mode assignment 1 (Logic output selection function) Logic output 1 to 4	R/W	Z-TIO: 4
378	Operation mode assignment 2 (Logic output selection function) Logic output 5 to 8	R/W	Z-TIO: 4
379	SV select function	R/W	Z-TIO: 4
380	Remote SV function master channel module address	R/W	Z-TIO: 4
381	Remote SV function master channel selection	R/W	Z-TIO: 4
382	Output distribution master channel module address	R/W	Z-TIO: 4
383	Output distribution master channel selection	R/W	Z-TIO: 4
384	Address of interacting modules	R/W	Z-TIO: 4
385	Channel selection of interacting modules	R/W	Z-TIO: 4
386	Selection switch of interacting modules	R/W	Z-TIO: 4
387	Control RUN/STOP holding setting	R/W	Z-TIO: 1 Z-DIO: 1
388	Interval time	R/W	Z-TIO: 1 Z-DIO: 1
389	Unused	— **	—
390	Memory area setting signal	R/W	Z-DIO: 1
391	DO signal assignment module address 1	R/W	Z-DIO: 1
392	DO signal assignment module address 2	R/W	Z-DIO: 1
393	DO output assignment 1 [DO1 to DO4]	R/W	Z-DIO: 1
394	DO output assignment 2 [DO5 to DO8]	R/W	Z-DIO: 1
395	DO energized/de-energized	R/W	Z-DIO: 8
396	DO output distribution master channel module address	R/W	Z-DIO: 8
397	DO output distribution master channel selection	R/W	Z-DIO: 8
398	DO manipulated output value (MV) at STOP mode	R/W	Z-DIO: 8
399	DO output limiter (high)	R/W	Z-DIO: 8
400	DO output limiter (low)	R/W	Z-DIO: 8
401 ⋮ 499	Unused	— **	—

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The data with an extension number equal to or greater than 500 are for the COM-MC. The table shows different contents of description from here on. Extension numbers, communication items, attributes, data ranges, correspondence module and occupation channels and factory set values are described.

Extension number	Communication item	Attribute	Data range	Correspondence module and occupation CH	Factory set value
500	Action mode selection [1]	R/W *	Bit data Bit 0: Address setting 0: Continuous setting 1: Free setting Bit 1 to Bit 15: Reserved [a] [a] Setting is prohibited. Doing so may result in malfunction or failure of the product.	COM-MC: 1	1
501	Transmission wait time of controller communication	R/W *	0 to 100 ms	COM-MC: 1	0
502	Type of connected controller	R/W *	0 to 5 4: Z-TIO module 5: Z-DIO module 0 to 3: Reserved (Do not set this one)	COM-MC: 31	Note
503	Address setting of connected controller	R/W *	0 to 99 0: No connected controller 1 to 16: Z-TIO module 17 to 32: Z-DIO module 33 to 99: Reserved (Do not set this one)	COM-MC: 31	1 to 31
504	State of connected controller	RO	Bit data Bit 0: Presence or absence of controller Bit 1: Presence or absence of abnormal response Bit 2 to Bit 15: Unused Data 0: Absence 1: Presence	COM-MC: 31	—

* When data outside the valid range is written, the following behavior occurs.
Written data: Not reflected
Extended setting: Works properly (Extended setting completion turns ON)

Note: When module address 1 to 16: 4
When module address 17 to 31: 5

[1] Address setting (bit 0) of Action mode selection (Extension No. 500)
Select a recognition method of the module address (continuous or free setting) at power on.

☞ For “continuous setting” and “free setting,” see **5.7 Module Address Recognition Method (P. 29)**.

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Extension number	Communication item	Attribute	Data range	Correspondence module and occupation CH	Factory set value
505	Automatic acquisition of controller address [1]	R/W *	0: Do not execute the automatic acquisition 1: Execute the automatic acquisition [a] [a] Automatically reverts to 0 after automatic acquisition ends.	COM-MC: 1	0
506 ⋮ 511	Unused	— **	—	—	—

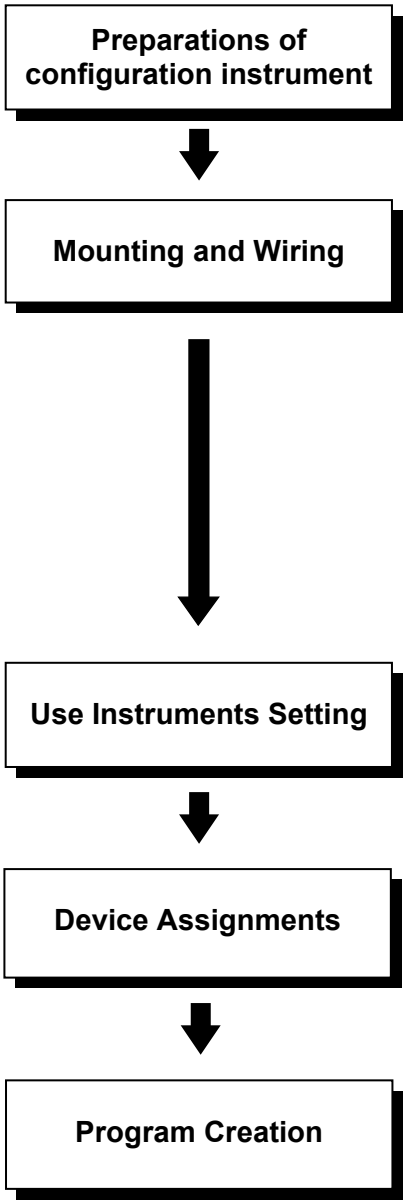
* When data outside the valid range is written, the following behavior occurs.
Written data: Not reflected
Extended setting: Works properly (Extended setting completion turns ON)

** Read: Zero is displayed (Extension display works properly)
Write: Not reflected (Extension setting works properly)

[1] Automatic acquisition of module address (Extension No. 505)
After having set "1: Execute the automatic acquisition," power off the instrument once and then power on again. Controller address (device address set on the controller) will be automatically acquired. In the automatic acquisition, module addresses are sequentially acquired from "1." The acquisition continues until 31 addresses are acquired or until module address 99 is verified. When the automatic acquisition is completed, the acquired module address will be automatically set to Extension No. 503 "Address setting of connected controller."

8. USAGE EXAMPLE

8.1 Handling Procedures



☞ See **8.2 System Configuration (P. 98)**

☞
- For mounting and wiring of the COM-MC, see **3. MOUNTING (P. 8)** and **4. WIRING (P. 13)**.
- For mounting and wiring of the controller (SRZ), refer to **Z-TIO Installation Manual (IMS01T01-E□)** and **Z-DIO Installation Manual (IMS01T03-E□)**.
- For mounting and wiring of PLC, refer to **PLC Instruction Manual**.

☞ For cable wiring of CC-Link network system, refer to Instruction Manual of master instrument or website of CC-Link Partner Association.
https://www.cc-link.org/

☞ See **5. SETTING (P. 22) and 8.3 Use Instruments Setting (P. 99)**.

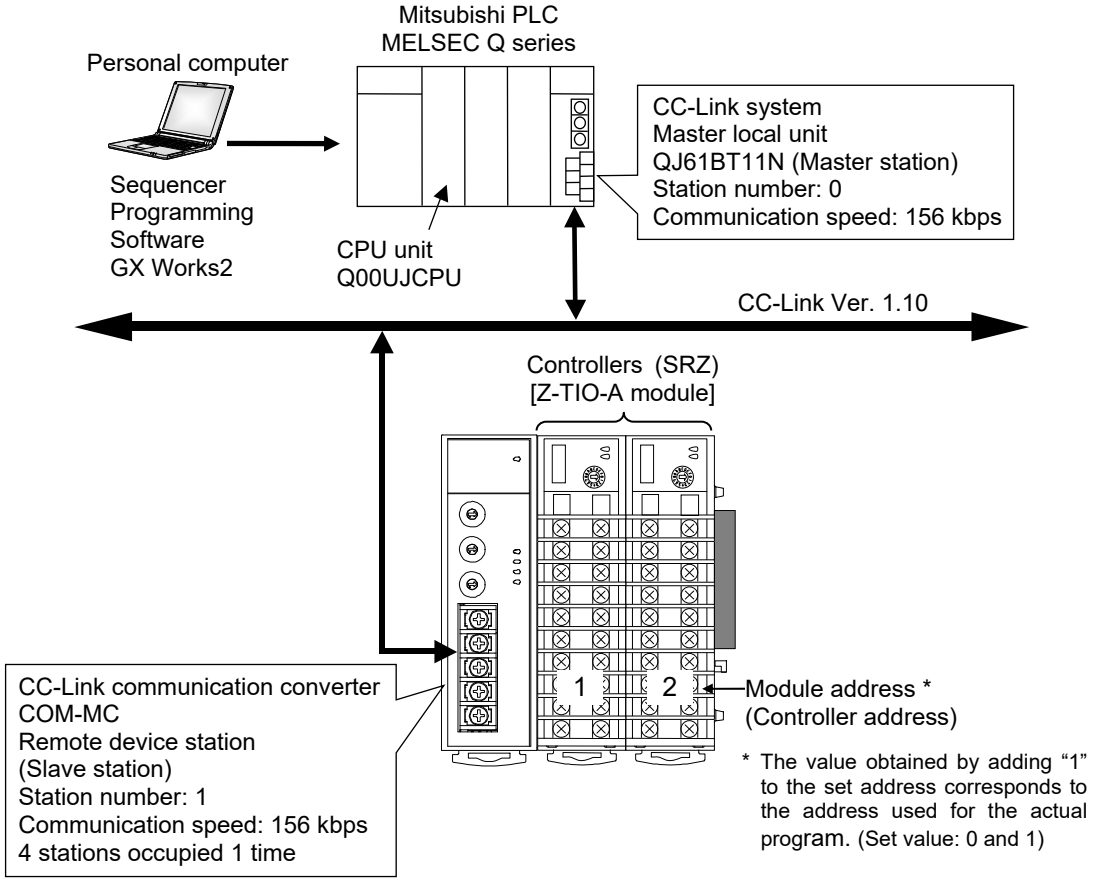
☞ See **8.4 Device Assignments Example (P. 101)**.

☞ See **8.5 Sample Program (P. 107)**.

📖 **To avoid error at operation start-up, COM-MC must be powered on LAST (after the Controller, PLC, etc.).**

8.2 System Configuration

In this usage example, described the following system configuration.



■ Use instruments

- **Mitsubishi PLC MELSEC Q series**
  CPU unit Q00UJCPU: 1
  CC-Link system master local unit QJ61BT11N: 1
  Power supply, I/O module, etc.
- **Controllers (SRZ)**
  Z-TIO-A module (4-channnel type): 2
  [Input type: Thermocouple K (0.0 to 400.0 °C)]
- **Communication converter**
  CC-Link communication converter COM-MC∗02: 1
- **Personal computer:** 1
- **Communication programs**
  Sequencer Programming Software GX Works2
  [Manufactured by MITSUBISHI ELECTRIC CO., LTD.,] *
  * Consult the instruction manuals of the PLC for how to use GX Works 2 and how to wire to the PLC.
- **Cable**
  CC-Link dedicated cable Ver. 1.10
  Connection cable used between COM-MC and controller

8.3 Use Instruments Setting

Set the PLC, COM-MC and controller as the following.

■ PLC setting

☞ For operating of CC-Link system master local unit QJ61BT11N and MELSEC sequencer programming software GX Works2, refer to PLC Instruction Manual.

[CC-Link system master local unit QJ61BT11N setting]

Setting item	Content
Station number	0
CC-Link communication speed	156 kbps

[Master station network parameter setting by GX Works2]

Setting item	Content
Number of boards in module	1
Start I/O number	0000
Operational settings	Parameter name: None Data link disorder station setting: Clear Case of CPU STOP setting: Refresh
Type	Master station
CC-Link mode setting	Remote net (Ver. 1 mode)
Total number of connected modules	1
Number of retries	5
Number of automatic return modules	1
Standby master station number	Blank
Operation specification when CPU is down	Stop
Scan mode specification	Asynchronous
Delay time setting	10 (500 μs)
Station information [Number of COM-MC connection: 1 (Station number: 1)]	Station type: Remote device station Expanded cyclic setting: Single Number of occupied station: Occupies 4 stations Remote station points: 128 points Reserved/invalid station select: No setting Intelligent buffer select (word): No setting

CC-Link version varies according to the specification of Occupied station/Extended cyclic of the COM-MC. Select CC-Link version of PLC by setting the following CC-Link specifications:

- 1 station occupied 1 time/4 stations occupied 1 time: CC-Link Ver. 1.10
- 4 stations occupied 2 times/4 stations occupied 4 times: CC-Link Ver. 2.00

[Automatic refresh parameter setting by GX Works2]

Setting item	Content
Remote input (RX) refresh device	X1000
Remote output (RY) refresh device	Y1000
Remote register (RWr) refresh device	W0
Remote register (RWw) refresh device	W100
Special relay (SB) refresh device	SB0
Special register (SW) refresh device	SW0

■ COM-MC setting

[CC-Link communication conditions]

- Number of Occupied station/Extended cyclic: 4 stations occupied 1 time (8 channels assignment)
- Station number: 1
- CC-Link communication speed: 156 kbps

[Controller communication condition]

- Controller communication speed: 19200 bps (Factory set value)

☞ For setting procedure, see **5. SETTING (P. 22)**.

■ Controller (Z-TIO-A module) setting

[Controller communication conditions]

- Module address: 1 and 2 (Set value: 0 and 1)
- Communication protocol: Modbus-RTU
- Communication speed: 19200 bps (Factory set value)
- Data bit configuration: Data 8 bits, non parity, Stop 1 bit

☞ For setting procedure, refer to **SRZ Instruction Manual (IMS01T04-E□)**.

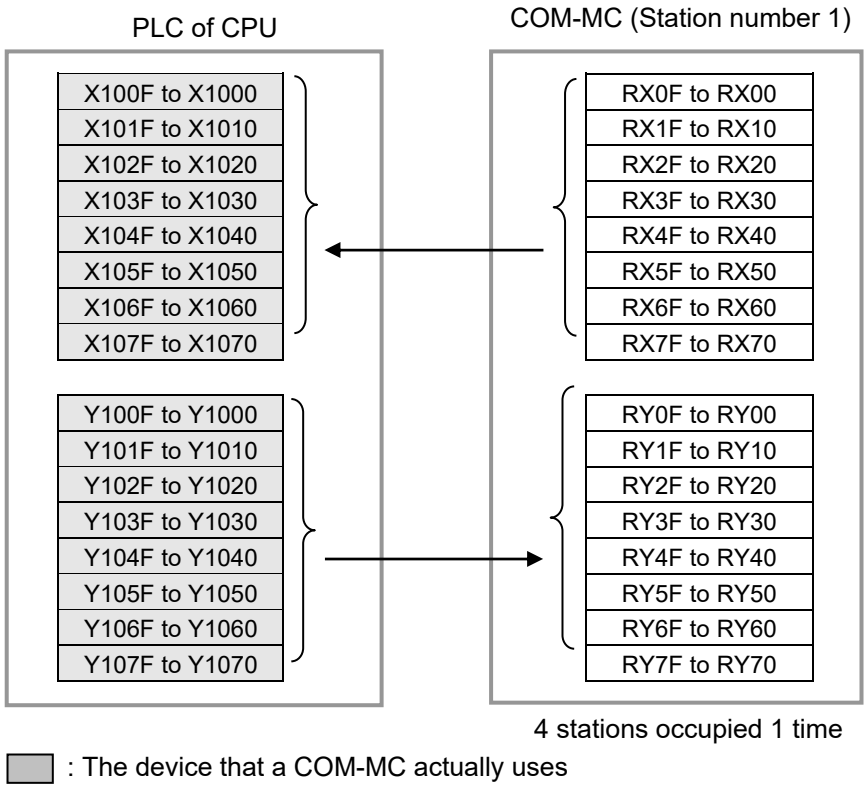
8.4 Device Assignments Example

According to the contents set by **8.3 Use Instruments Setting (P. 99)**, each device is assigned.

■ Assignment conditions

Station number of COM-MC:	1
Number of Occupied station/Extended cyclic:	4 stations occupied 1 time (8 channels assignment)
Automatic refresh device setting	
Remote input (RX) refresh device:	X1000
Remote output (RY) refresh device:	Y1000
Remote register (RWr) refresh device:	W0
Remote register (RWw) refresh device:	W100
Special relay (SB) refresh device:	SB0
Special register (SW) refresh device:	SW0

■ Remote input (RX) and Remote output (RY)



- **Device assignment table of remote input (RX)**

CPU device number	Communication item		Remote input (RX) address
X1000	CH1 (Module address 1)	Event 1 state	RX00
X1001		Event 2 state	RX01
X1002		Burnout state	RX02
X1003		Heater break alarm (HBA) state	RX03
X1004		PID/AT transfer state	RX04
X1005	CH2 (Module address 1)	Event 1 state	RX05
X1006		Event 2 state	RX06
X1007		Burnout state	RX07
X1008		Heater break alarm (HBA) state	RX08
X1009		PID/AT transfer state	RX09
X100A	Unused		RX0A
X100B	Unused		RX0B
X100C	Extended display completion		RX0C
X100D	Extended setting completion		RX0D
X100E	Unused		RX0E
X100F	Hardware error flag		RX0F
X1010 • • • X101F	Reserved		RX10 • • • RX1F
X1020	CH3 (Module address 1)	Event 1 state	RX20
X1021		Event 2 state	RX21
X1022		Burnout state	RX22
X1023		Heater break alarm (HBA) state	RX23
X1024		PID/AT transfer state	RX24
X1025	CH4 (Module address 1)	Event 1 state	RX25
X1026		Event 2 state	RX26
X1027		Burnout state	RX27
X1028		Heater break alarm (HBA) state	RX28
X1029		PID/AT transfer state	RX29
X102A	CH5 (Module address 2)	Event 1 state	RX2A
X102B		Event 2 state	RX2B
X102C		Burnout state	RX2C
X102D		Heater break alarm (HBA) state	RX2D
X102E		PID/AT transfer state	RX2E
X102F	CH6 (Module address 2)	Event 1 state	RX2F
X1030		Event 2 state	RX30
X1031		Burnout state	RX31
X1032		Heater break alarm (HBA) state	RX32
X1033		PID/AT transfer state	RX33
X1034	CH7 (Module address 2)	Event 1 state	RX34
X1035		Event 2 state	RX35
X1036		Burnout state	RX36
X1037		Heater break alarm (HBA) state	RX37
X1038		PID/AT transfer state	RX38
X1039	CH8 (Module address 2)	Event 1 state	RX39
X103A		Event 2 state	RX3A

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CPU device number	Communication item		Remote input (RX) address
X103B	CH8 (Module address 2)	Burnout state	RX3B
X103C		Heater break alarm (HBA) state	RX3C
X103D		PID/AT transfer state	RX3D
X103E • • • X106F	Unused		RX3E • • • RX6F
X1070 • • • X1077	Reserved		RX70 • • • RX77
X1078	Initialize data processing request flag		RX78
X1079	Initialize data setting completion flag		RX79
X107A	Error status flag		RX7A
X107B	Remote ready		RX7B
X107C • • • X107F	Reserved		RX7C • • • RX7F

- **Device assignment table of remote output (RY)**

CPU device number	Communication item		Remote output (RY) address
Y1000	Bit 0	Extension number for display	RY00
Y1001	Bit 1		RY01
Y1002	Bit 2		RY02
Y1003	Bit 3		RY03
Y1004	Bit 4		RY04
Y1005	Bit 5		RY05
Y1006	Bit 0	Extension number for setting	RY06
Y1007	Bit 1		RY07
Y1008	Bit 2		RY08
Y1009	Bit 3		RY09
Y100A	Bit 4		RY0A
Y100B	Bit 5		RY0B
Y100C	Extended display flag		RY0C
Y100D	Extended setting flag (Setting update flag)		RY0D
Y100E	Unused		RY0E
Y100F	RUN/STOP transfer		RY0F
Y1010	Bit 6	Extension number for display (Bit 9 to Bit 13: Unused)	RY10
Y1011	Bit 7		RY11
Y1012	Bit 8		RY12
Y1013	Bit 9		RY13
Y1014	Bit 10		RY14
Y1015	Bit 11		RY15

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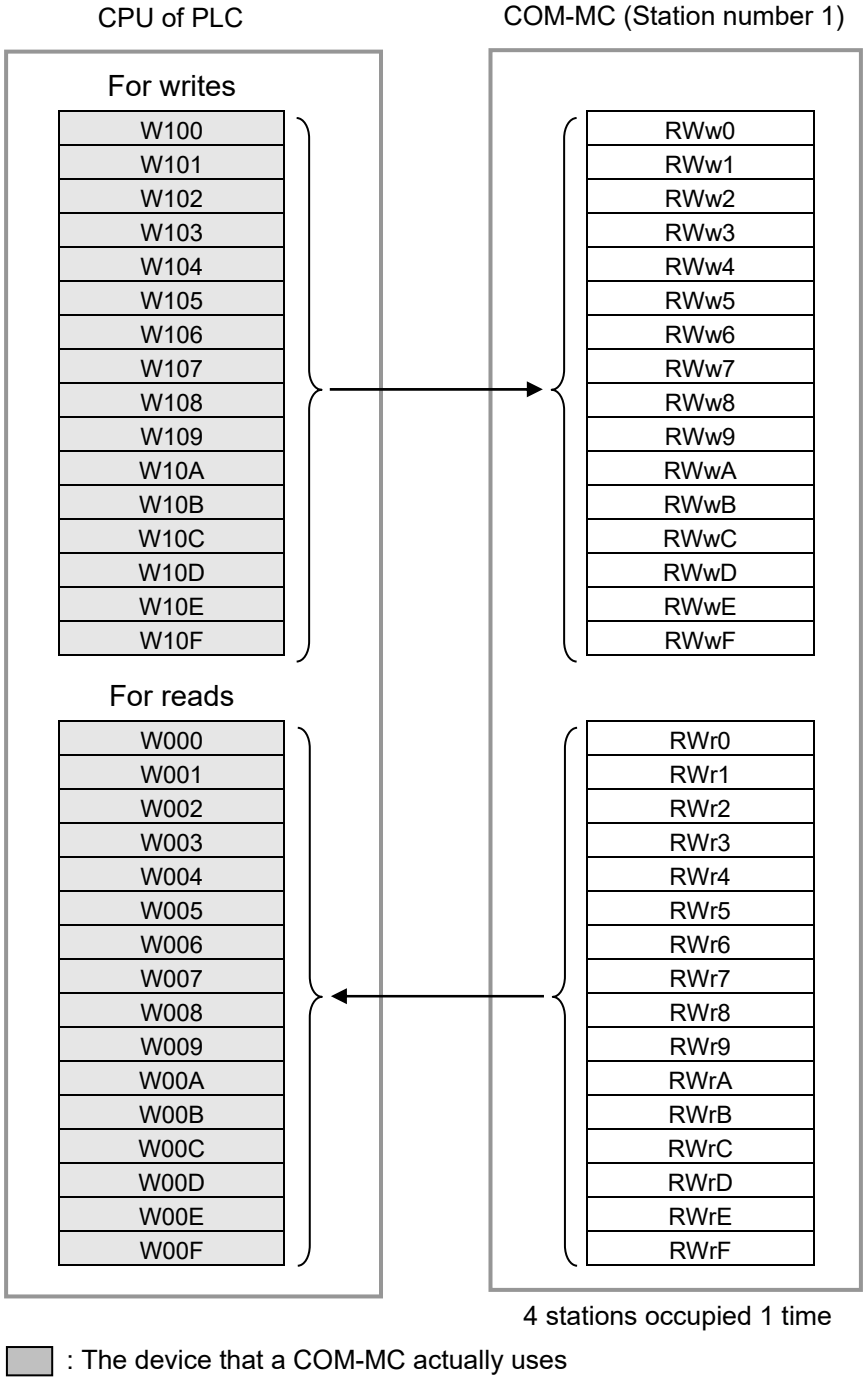
CPU device number	Communication item		Remote output (RY) address
Y1016	Bit 12	Extension number for display (Bit 9 to Bit 13: Unused)	RY16
Y1017	Bit 13		RY17
Y1018	Bit 6	Extension number for setting (Bit 9 to Bit 13: Unused)	RY18
Y1019	Bit 7		RY19
Y101A	Bit 8		RY1A
Y101B	Bit 9		RY1B
Y101C	Bit 10		RY1C
Y101D	Bit 11		RY1D
Y101E	Bit 12		RY1E
Y101F	Bit 13		RY1F
Y1020	Bit 0	Area number for display (Bit 4 to Bit 7: Unused)	RY20
Y1021	Bit 1		RY21
Y1022	Bit 2		RY22
Y1023	Bit 3		RY23
Y1024	Bit 4		RY24
Y1025	Bit 5		RY25
Y1026	Bit 6		RY26
Y1027	Bit 7		RY27
Y1028	Bit 0	Area number for setting (Bit 4 to Bit 7: Unused)	RY28
Y1029	Bit 1		RY29
Y102A	Bit 2		RY2A
Y102B	Bit 3		RY2B
Y102C	Bit 4		RY2C
Y102D	Bit 5		RY2D
Y102E	Bit 6		RY2E
Y102F	Bit 7		RY2F
Y1030 ⋮ Y106F	Unused		RY30 ⋮ RY6F
Y1070 ⋮ Y1077	Reserved		RY70 ⋮ RY77
Y1078	Initialize data processing completion flag		RY78
Y1079	Initialize data setting request flag		RY79
Y107A	Error reset request flag		RY7A
Y107B ⋮ Y107F	Reserved		RY7B ⋮ RY7F

■ Remote register (RWr, RWw)



: The device that a COM-MC actually uses

- **Device assignment table of remote register (RWw)**

CPU device number	Communication item	Remote register (RWw) address
W100	Set value (SV) of CH1 (Module address 1)	RWw0
W101	Set value (SV) of CH2 (Module address 1)	RWw1
W102	Set value (SV) of CH3 (Module address 1)	RWw2
W103	Set value (SV) of CH4 (Module address 1)	RWw3
W104	Set value (SV) of CH5 (Module address 2)	RWw4
W105	Set value (SV) of CH6 (Module address 2)	RWw5
W106	Set value (SV) of CH7 (Module address 2)	RWw6
W107	Set value (SV) of CH8 (Module address 2)	RWw7
W108	For extension area setting of CH1 (Module address 1)	RWw8
W109	For extension area setting of CH2 (Module address 1)	RWw9
W10A	For extension area setting of CH3 (Module address 1)	RWwA
W10B	For extension area setting of CH4 (Module address 1)	RWwB
W10C	For extension area setting of CH5 (Module address 2)	RWwC
W10D	For extension area setting of CH6 (Module address 2)	RWwD
W10E	For extension area setting of CH7 (Module address 2)	RWwE
W10F	For extension area setting of CH8 (Module address 2)	RWwF

- **Device assignment table of remote register (RWr)**

CPU device number	Communication item	Remote register (RWr) address
W000	Measured value (PV) of CH1 (Module address 1)	RWr0
W001	Measured value (PV) of CH2 (Module address 1)	RWr1
W002	Measured value (PV) of CH3 (Module address 1)	RWr2
W003	Measured value (PV) of CH4 (Module address 1)	RWr3
W004	Measured value (PV) of CH5 (Module address 2)	RWr4
W005	Measured value (PV) of CH6 (Module address 2)	RWr5
W006	Measured value (PV) of CH7 (Module address 2)	RWr6
W007	Measured value (PV) of CH8 (Module address 2)	RWr7
W008	For extension area display of CH1 (Module address 1)	RWr8
W009	For extension area display of CH2 (Module address 1)	RWr9
W00A	For extension area display of CH3 (Module address 1)	RWrA
W00B	For extension area display of CH4 (Module address 1)	RWrB
W00C	For extension area display of CH5 (Module address 2)	RWrC
W00D	For extension area display of CH6 (Module address 2)	RWrD
W00E	For extension area display of CH7 (Module address 2)	RWrE
W00F	For extension area display of CH8 (Module address 2)	RWrF

8.5 Sample Program

■ Program conditions

Station number of COM-MC: 1

Number of Occupied station/Extended cyclic:
4 stations occupied 1 time (8 channels assignment)

Automatic refresh device assignment: See **8.4 Device Assignments Example (P. 101)**.

Special relay (M) assignment:
M0: Extension number setting flag for display
M1: Measured value (PV)/Manipulated output value (MV) transfer
M2: Extension number setting flag for setting

Data register (D) assignment:
D0: Measured value (PV) store of CH1
D1: Measured value (PV) store of CH2
D2: Measured value (PV) store of CH3
D3: Measured value (PV) store of CH4
D4: Measured value (PV) store of CH5
D5: Measured value (PV) store of CH6
D6: Measured value (PV) store of CH7
D7: Measured value (PV) store of CH8
D8: Manipulated output value (MV) store of CH1
D9: Manipulated output value (MV) store of CH2
D10: Manipulated output value (MV) store of CH3
D11: Manipulated output value (MV) store of CH4
D12: Manipulated output value (MV) store of CH5
D13: Manipulated output value (MV) store of CH6
D14: Manipulated output value (MV) store of CH7
D15: Manipulated output value (MV) store of CH8

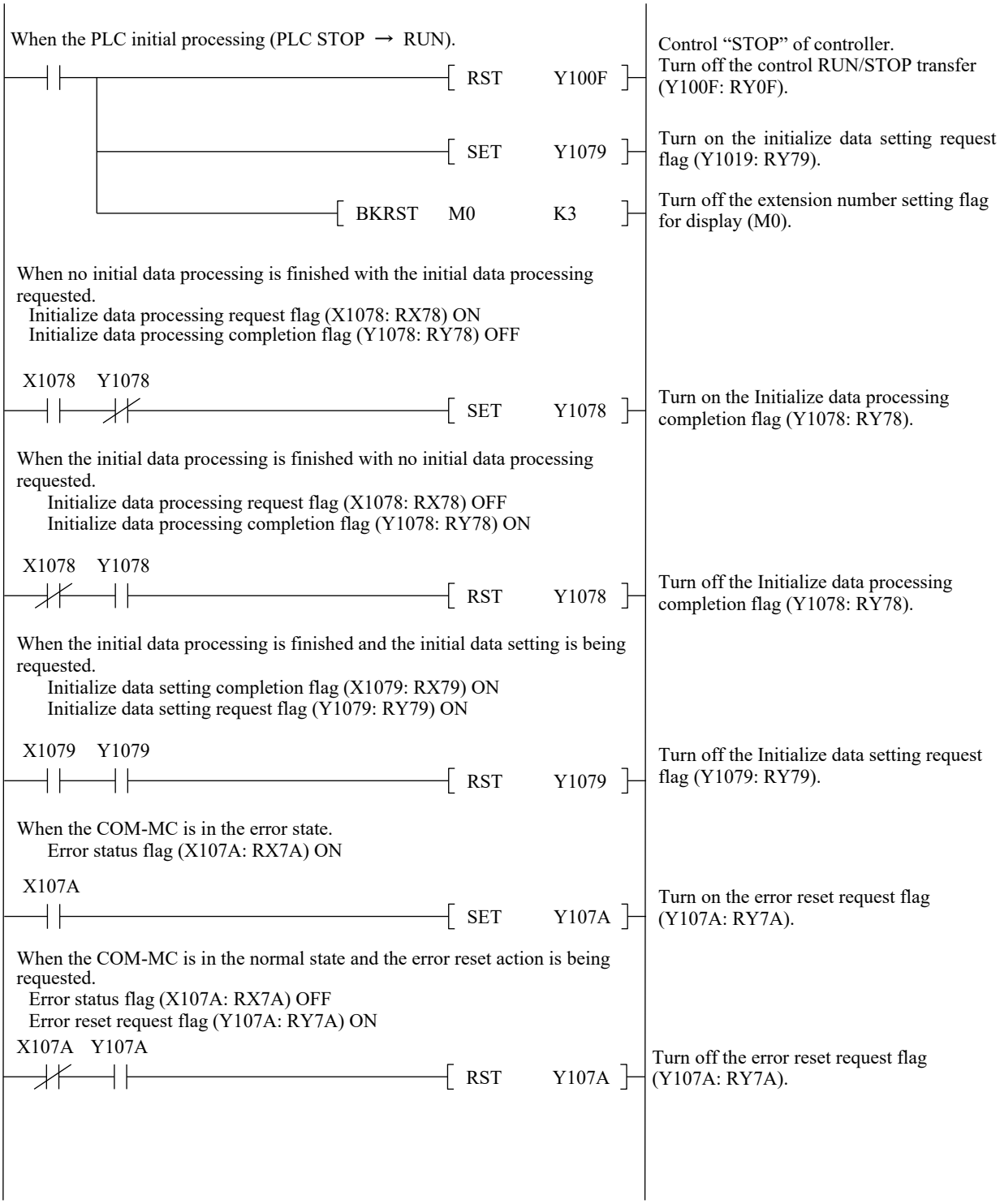
■ Program operation

1. Store Measured value (PV) and Manipulated output value (MV) to a data register.

2. Write in Set value (SV) of CH1 to CH8.
CH1 set value (SV): 150.0 °C
CH2 set value (SV): 200.0 °C
CH3 set value (SV): 250.0 °C
CH4 set value (SV): 300.0 °C
CH5 set value (SV): 350.0 °C
CH6 set value (SV): 400.0 °C
CH7 set value (SV): 450.0 °C
CH8 set value (SV): 500.0 °C

3. Change the controller to the control RUN.

■ Sample program



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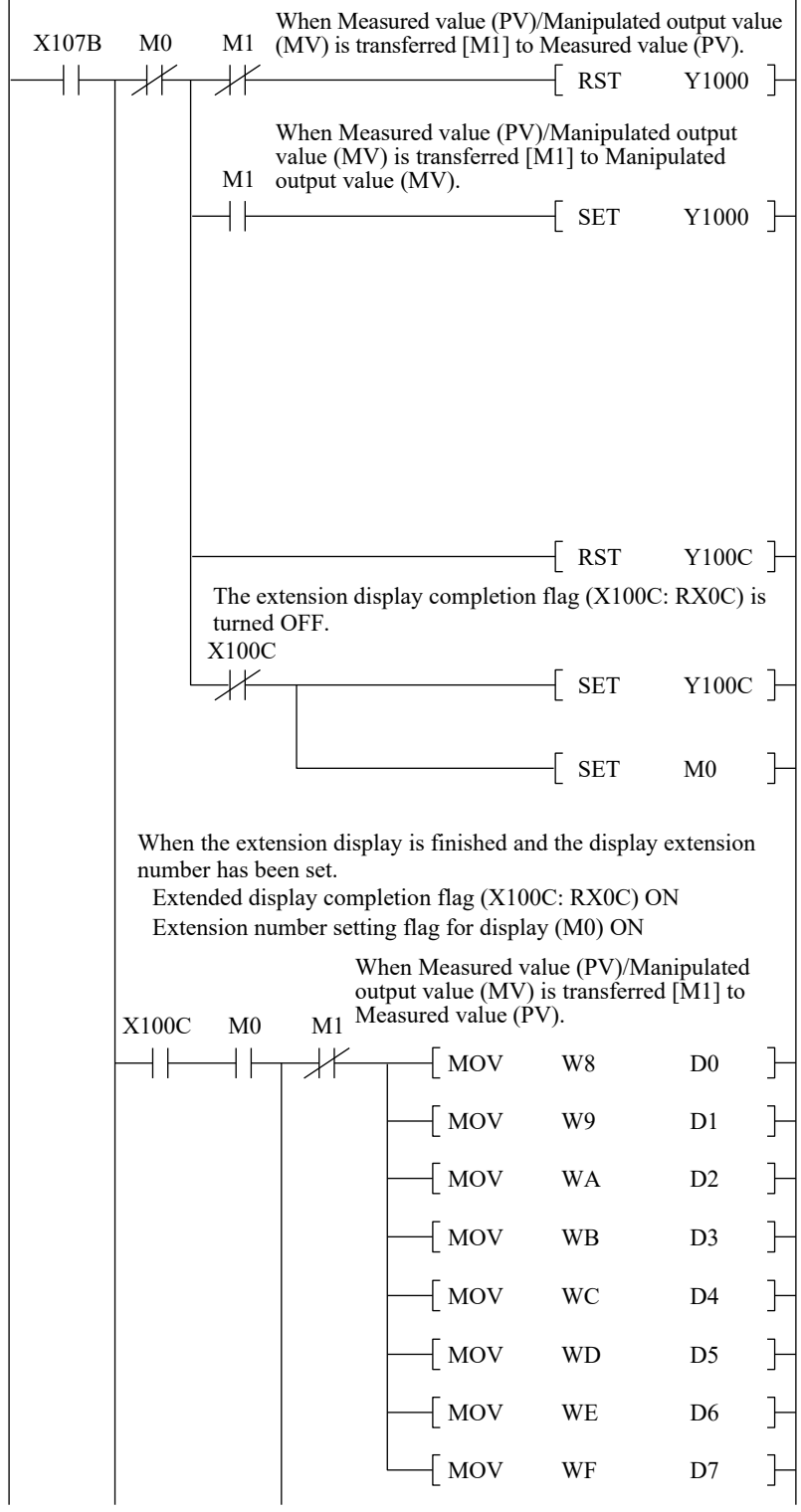
When the COM-MC is in the remote ready state and no display extension number setting is processed yet.
Remote ready (X107B: RX7B) ON
Extension number setting flag for display (M0) OFF



Set the extension number for display.
Extension number 0: Turn off the extension number setting Bit 0 (Y1000: RY00) for Measured value (PV) display.

Set the extension number for display.
Extension number 1: Turn on the extension number setting Bit 0 (Y1000: RY00) for Manipulated output value (MV1) display.

Only the bit (Bit 0) necessary for setting display extension number "0" or "1" is specified. Any unspecified bit is assumed to be the register initial value, "0."

Turn off the extension display flag (Y100C: RY0C).

Turn on the extension display flag (Y100C: RY0C).

Extension number setting end for display.
Turn on the extension number setting flag for display (M0).

When the extension display is finished and the display extension number has been set.
Extended display completion flag (X100C: RX0C) ON
Extension number setting flag for display (M0) ON

Store the Measured value (PV) of CH1 into the data register D0.
Store the extension area for display (W008: RWr8) of CH1 into the data register D0.

Succeedingly, store the measured value (PV) of CH2 to CH8 into the data registers D1 to D7.
And store the extension area for display (W009 to W00F: RWr9 to RWrF) of CH2 to CH8 into the data registers D1 to D7.

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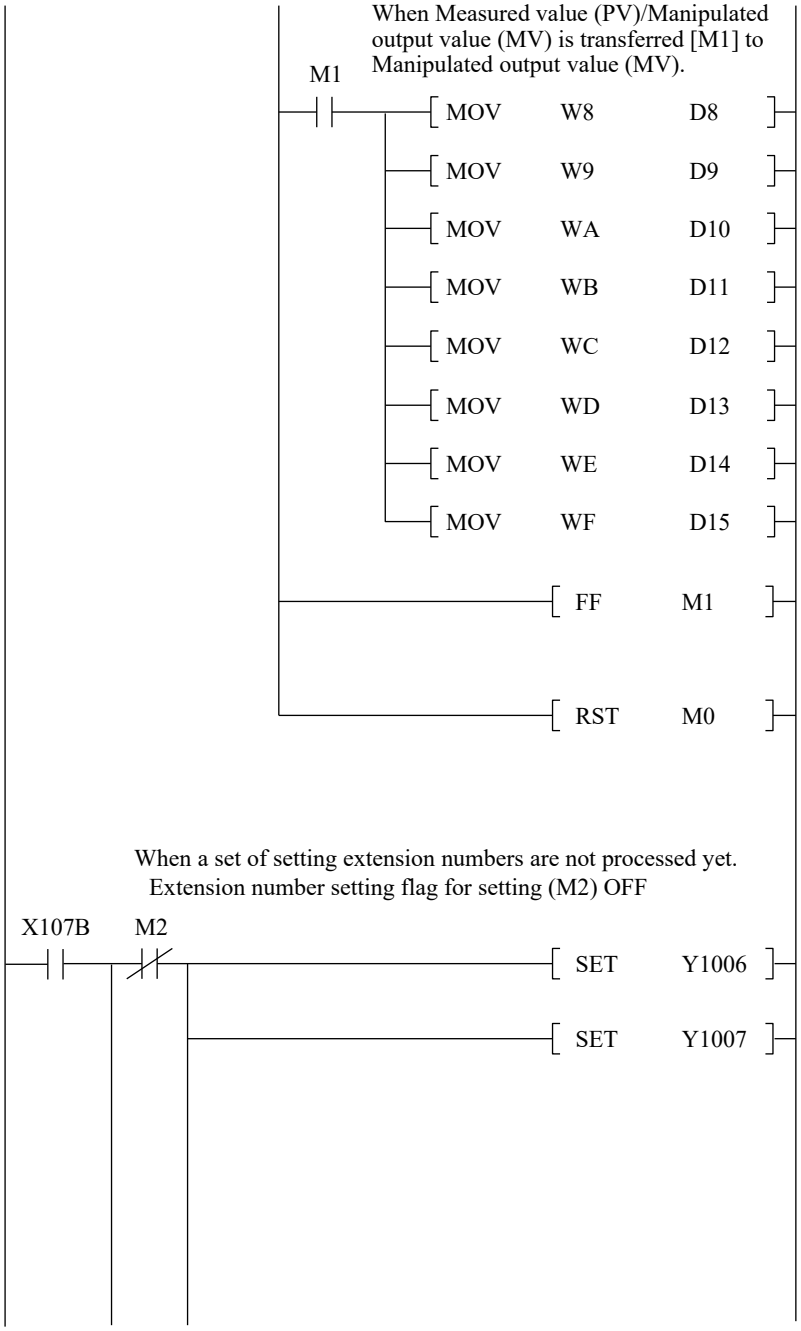

Store the Manipulated output value (MV) of CH1 into the data register D8.
Store the extension area for display (W008: RWr8) of CH1 into the data register D8.

Succeedingly, store the Manipulated output value (MV) of CH2 to CH8 into the data registers D9 to D15.
And store the extension area for display (W009 to W00F: RWr9 to RWrF) of CH2 to CH8 into the data register D9 to D15.

Measured value (PV)/Manipulated output value (MV) is inversely transferred [M1].
Variables to be read are alternately selected.

Turn off the extension number setting flag for display (M0).

Set the extension number for setting.
Extension number 3: Turn on the extension number setting Bit 0 (Y1006: RY06) for Set value (SV) setting.
Turn on the extension number setting Bit 1 (Y1007: RY07)

Only the bits (Bit 0 and Bit 1) necessary forsetting extension number “3” are specified. Any unspecified bit is assumed to be the register initial value, “0.”

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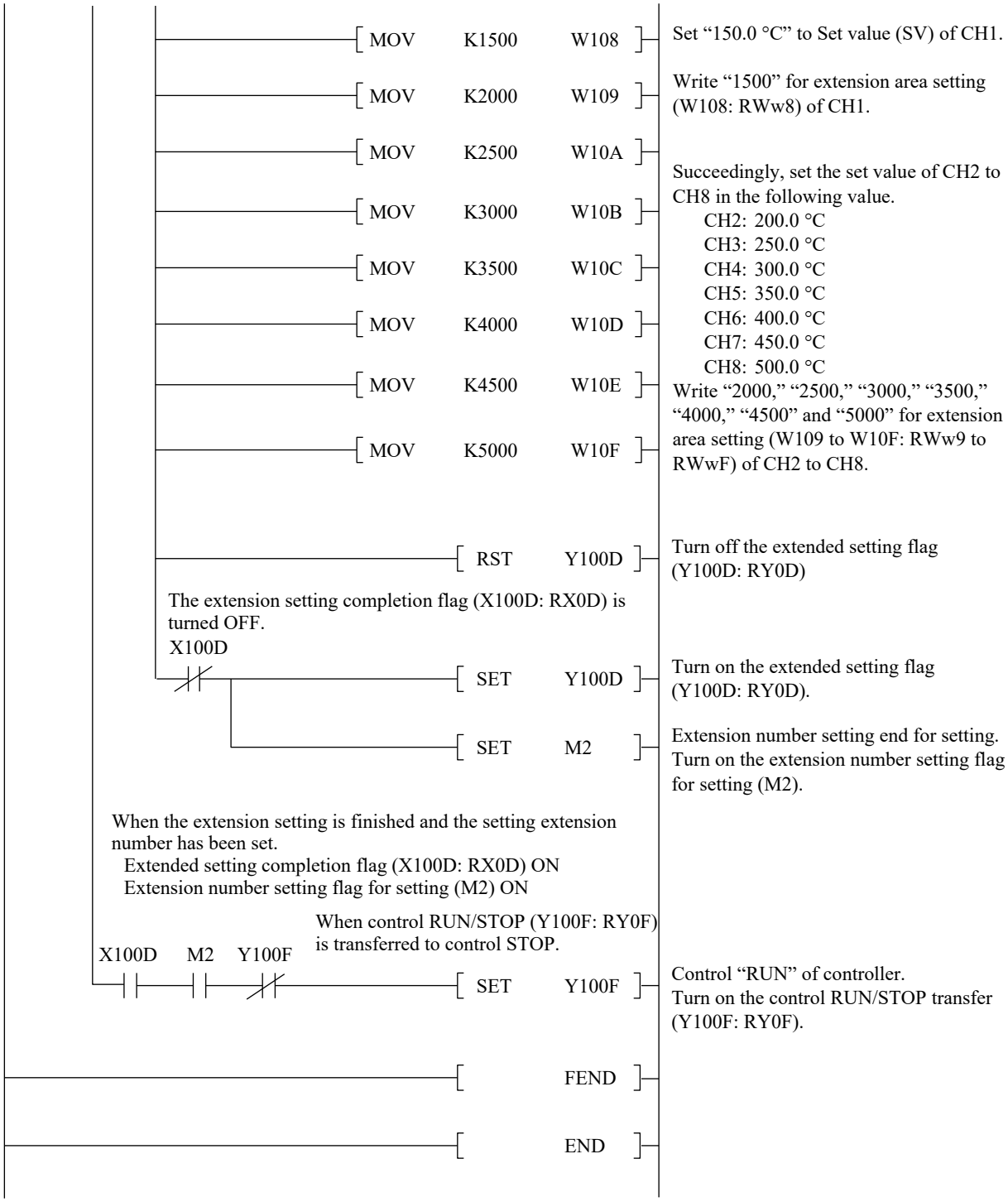

9. TROUBLESHOOTING

This section explains possible causes and solutions if any abnormality occurs in the instrument. For any inquiries or to confirm the specifications of the product, please contact RKC or our distributors.

If the instrument needs to replaced, always strictly observe the warnings below.

⚠ WARNING

- To prevent electric shock or instrument failure, always turn off the system power before replacing the instrument.
- To prevent electric shock or instrument failure, always turn off the power before mounting or removing the instrument.
- To prevent electric shock or instrument failure, do not turn on the power until all wiring is completed. Make sure that the wiring is correct before applying power to the instrument.
- To prevent electric shock or instrument failure, do not touch the inside of the instrument.
- All wiring must be performed by authorized personnel with electrical experience in this type of work.

⚠ CAUTION

All wiring must be completed before power is turned on to prevent electric shock, instrument failure, or incorrect action.

NOTE

When replacing the instrument with a new one, always use the instrument with the same model code. If the instrument is replaced, it is necessary to re-set each data item.

■ COM-MC

Problem	Possible cause	Solution
FAIL lamp: Turns on	The station number and communication speed settings of COM-MC are out of their setting ranges.	Set the station number and communication speed settings of COM-MC to values within their setting ranges. And turn on the power again.
	Hardware abnormality or software abnormality	Replace the COM-MC with a new one it in the abnormal state even with the power turned on again.
FAIL lamp: Rapid blinking (800 ms cycle)	The station number and communication speed settings of the COM-MC have been changed during communication.	• Turn on the power again. • Return the switch setting to the original setting.
FAIL lamp: Slow blinking (2000 ms cycle)	The CC-Link version of the COM-MC differs from that of the master instrument (PLC).	Coincide the CC-Link version of the COM-MC with that of the master instrument (PLC). • 1 station occupied 1 time/ 4 stations occupied 1 time: CC-Link Ver. 1.10 • 4 stations occupied 2 times/ 4 stations occupied 4 times: CC-Link Ver. 2.00
	The number of Occupied station/ Extended cyclic setting of the COM-MC differs from that of the master instrument (PLC).	Coincide the number of Occupied station/Extended cyclic setting of the COM-MC with that of the master instrument (PLC).
	The station number and the communication speed settings are different between the COM-MC and the master instrument (PLC).	Use the same station number and the communication speed settings for both the COM-MC and the master instrument (PLC).
	No connection, disconnection, breakage or wrong wiring of CC-Link cable	Confirm the connection method or condition and connect correctly
	A termination resistor of CC-Link is not connected	Confirm the termination resistor, and connected correctly
RUN lamp: Slow blinking (1000 ms cycle)	Controller communication (Between COM-MC and controllers) is abnormal	• Check that the signal line of the COM-MC and controller are correctly connected. • Check that the communication setting (Address, protocol, communication speed and data bit configuration) of the COM-MC coincides with that of the controller. • Confirm whether a termination resistor is connected.
	Backup circuit seems to be faulty.	Turn on the power again.

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Problem	Possible cause	Solution
Cannot recognize the controller	Incorrect sequence of power-on	COM-MC must be powered on last.

If you are unable to solve the problem by following the recommended instructions, contact RKC or our distributors.

10. SPECIFICATIONS

■ CC-Link communication

Corresponding standards: CC-Link Ver. 2.00/Ver. 1.10

Communication speed: 156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps, 10 Mbps

Maximum transmission distance:

See table shown below

Communication speed	Maximum network length
10 Mbps	100 m
5 Mbps	160 m
2.5 Mbps	400 m
625 kbps	900 m
156 kbps	1200 m

Station number: 1 to 61 (4 stations occupied 1 time, 4 stations occupied 2 times
4 stations occupied 4 times)
1 to 64 (1 station occupied 1 time)

Connection cable: CC-Link dedicated cable Ver. 1.10 (Shielded twisted pair wire)

Number of occupied station/extended cyclic and CC-Link version:

CC-Link Ver. 1.10: 1 station occupied 1 time, 4 stations occupied 1 time

CC-Link Ver. 2.00: 4 stations occupied 2 times, 4 stations occupied 4 times

Connection method: Terminals

Termination resistor: External installation is necessary
(Between the DA and DB terminals: 110 Ω ± 5 % 1/2 W)

Communication data length:

See table shown below

Number of occupied station/Extended cyclic	Remote Input/Output (RX/RY)	Remote register (RWr/RWw)	Number of CC-Link assignment channels
4 stations occupied 1 time	Input: 128 bits Output: 128 bits	RWr: 16 words RWw: 16 words	8 channels or 16 channels
4 stations occupied 2 times	Input: 224 bits Output: 224 bits	RWr: 32 words RWw: 32 words	16 channels or 32 channels
4 stations occupied 4 times	Input: 448 bits Output: 448 bits	RWr: 64 words RWw: 64 words	32 channels or 64 channels
1 station occupied 1 time	Input: 32 bits Output: 32 bits	RWr: 4 words RWw: 4 words	1 channel or 2 channels

■ Controller communication

Interface: Base on RS-485, EIA standard (Multi-drop connection is available.)

Protocol: Modbus-RTU

Synchronous method: Half-duplex start-stop synchronous type

Communication speed: 9600 bps, 19200 bps, 38400 bps, 57600 bps [1]

[1] When the switch is set to 57600 bps, the controller communication with the SRZ is not possible.

Data bit configuration: Start 1 bit, Data 8 bits, non parity, Stop 1 bit

Maximum connections: 24 controllers (SRZ module [2]) [Module address setting: 1 to 99]

[2] Z-TIO-A/B module (Up to 16 modules)
Z-DIO-A module (Up to 8 modules)

Connection method: Joint connector or terminals

Termination resistor: Externally terminal connected (120 Ω 1/2 W)

■ Self-diagnostic function

Operation stopped

Self-diagnosis items	Display at error occurrence	Communication at error occurrence
Power supply voltage error	RUN lamp turns off FAIL lamp turns on	Controller communication: Stopped CC-Link communication: Stopped
Watchdog timer error	RUN lamp turns off FAIL lamp turns on	Controller communication: Stopped CC-Link communication: Stopped

Major fault

Self-diagnosis items	Display at error occurrence	Communication at error occurrence
Hardware error	FAIL lamp turns on	Controller communication: Stopped CC-Link communication: Continuing Hard error flag RXnF=ON Watchdog timer error (Corresponding bits of SW0084 to SW0087) =ON
RAM read/write error	FAIL lamp turns on	Controller communication: Stopped CC-Link communication: Continuing Hard error flag RXnF=ON Watchdog timer error (Corresponding bits of SW0084 to SW0087) =ON
Stack overflow	FAIL lamp turns on	Controller communication: Stopped CC-Link communication: Continuing Hard error flag RXnF=ON Watchdog timer error (Corresponding bits of SW0084 to SW0087) =ON

Recoverable fault

Self-diagnosis items	Display at error occurrence	Communication at error occurrence
Configuration error	RUN lamp blinks (1000 ms cycle)	Controller communication: Continuing CC-Link communication: Continuing Error status flag RX(n+1/n+7/n+D/n+1B)A=ON
Memory back-up error	RUN lamp blinks (1000 ms cycle)	Controller communication: Continuing CC-Link communication: Continuing Error status flag RX(n+1/n+7/n+D/n+1B)A=ON

CC-Link error

Self-diagnosis items	Display at error occurrence	Communication at error occurrence
CC-Link setting error	FAIL lamp turns on	Controller communication: Continuing CC-Link communication: Stopped
CC-Link operation error	FAIL lamp blinks (2000 ms cycle)	Controller communication: Continuing CC-Link communication: Stopped
CC-Link setting is changed	FAIL lamp blinks (800 ms cycle)	Controller communication: Continuing CC-Link communication: Continuing

■ General specifications

Power supply voltage: 21.6 to 26.4 V DC [Including power supply voltage variation]
(Rating 24 V DC)

Power consumption: 45 mA max. (at 24 V DC)
Rush current: 15 A or less

Insulation resistance: See table shown below

	①	②
① Grounding terminal/ CC-Link communication terminal		
② Power terminal	20 MΩ or more at 500 V DC	
③ Controller communication	20 MΩ or more at 500 V DC	20 MΩ or more at 500 V DC *

* When the COM-MC and the controller (SRZ) are snapped together or connected via a communication cable, the ② Power terminal and the ③ Controller communication are not isolated in this case.

Withstand voltage: See table shown below

Time: 1 minute	①	②
① Grounding terminal/ CC-Link communication terminal		
② Power terminal	750 V AC	
③ Controller communication	750 V AC	600 V AC *

* When the COM-MC and the controller (SRZ) are snapped together or connected via a communication cable, the ② Power terminal and the ③ Controller communication are not isolated in this case.

Power failure: A power failure of 5 ms or less will not affect the control action.
(Rating 24 V DC)

Memory backup: Backed up by non-volatile memory
Number of writing: Approx. 100,000 times (EEP-ROM)
Data storage period: Approx. 10 years (EEP-ROM)

Vibration: Frequency range: 10 to 150 Hz
Amplitude: 0.075 mm
Acceleration: 9.8 m/s^2
Each direction of XYZ axes

Shock: Drop (in X- and Y-axes) when the instrument is tilted along one bottom edge so that the height between the opposite edge and the instrument is 50 mm or the angle made by the opposite edge and the instrument is 30°, whichever is less severe.

Allowable ambient temperature:
0 to 55 °C

Allowable ambient humidity:
5 to 95 %RH (Non condensing)
Absolute humidity: MAX.W.C 29 g/m^3 dry air at 101.3 kPa

Operating environment: Avoid the following conditions when selecting the mounting location.
- Rapid changes in ambient temperature which may cause condensation.
- Corrosive or inflammable gases.
- Direct vibration or shock to the main unit.
- Water, oil, chemicals, vapor or steam splashes.
- Direct air flow from an air conditioner.
- Exposure to direct sunlight.
- Excessive heat accumulation.

Weight: Approx. 130 g

Dimensions: 30 × 100 × 76.9 mm (W × H × D)

■ Standard

Safety standard: UL: UL61010-1
cUL: CAN/CSA-C22.2 No. 61010-1

CE marking: LVD: EN61010-1
EMC: EN61326-1
RoHS: EN IEC 63000

RCM: EN55011

KC Mark: Radio Waves Act: KS C 9610-6-2
KS C 9610-6-4

Environment conditions:
POLLUTION DEGREE 2
Altitude up to 2000 m (Indoor use)

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