

CC-Link Communication Converter **COM-JC** [For SRZ] Quick Instruction Manual

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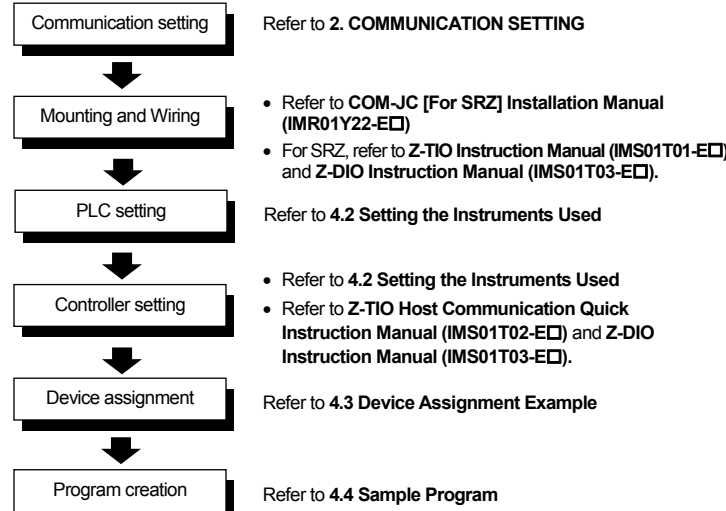
IMR01Y26-E2

In order to achieve maximum performance and ensure proper operation of your new instrument, carefully read all the instructions in the manual. Please place this manual in a convenient location for easy reference.

This manual describes the basic operation only.

For detailed handling procedures and functions, refer to separate **COM-JC [For SRZ] Instruction Manual (IMR01Y34-E0)**. The manual can be downloaded from the official RKC website: http://www.rkcinst.com/english/manual_load.htm.

1. HANDLING PROCEDURES



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

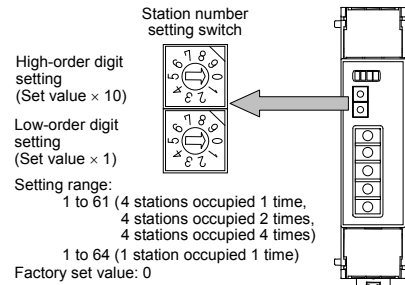
2. COMMUNICATION SETTING

CAUTION

Do not separate the mainframe from the terminal base with the power turned on. If so, instrument failure may result.

2.1 Station Number Setting

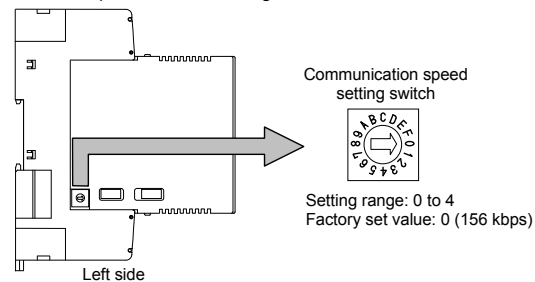
Set the station number of CC-Link using a small blade screwdriver.



When set to any value out of the setting range, the COM-JC becomes the FAIL state.

2.2 Communication Speed Setting

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



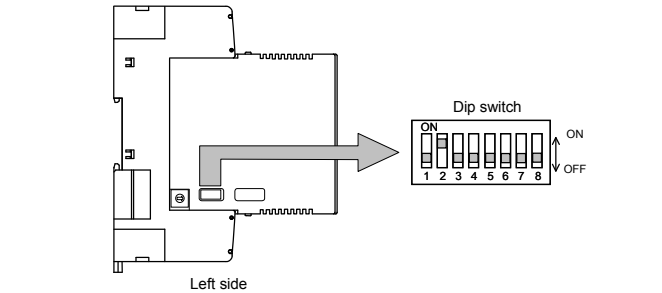
When set to any value out of the setting range, the COM-JC becomes the FAIL state.

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

2.3 Occupied Stations/Extended Cyclic and Controller Communication Speed Setting

Set the number of 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
ON	ON	38400 bps

Factory set value: 19200 bps

3	4	5	Number of occupied stations/extended cyclic setting
OFF	OFF	OFF	4 stations occupied 1 time (8 channels assignment)
ON	OFF	OFF	4 stations occupied 1 time (16 channels assignment)
OFF	ON	OFF	4 stations occupied 2 times (16 channels assignment)
ON	ON	OFF	4 stations occupied 2 times (32 channels assignment)
OFF	OFF	ON	1 station occupied 1 time (1 channel assignment)
ON	OFF	ON	1 station occupied 1 time (2 channels assignment)
OFF	ON	ON	4 stations occupied 4 times (32 channels assignment)
ON	ON	ON	4 stations occupied 4 times (64 channels assignment)

Factory set value: 4 stations occupied 1 time (8 channels assignment)

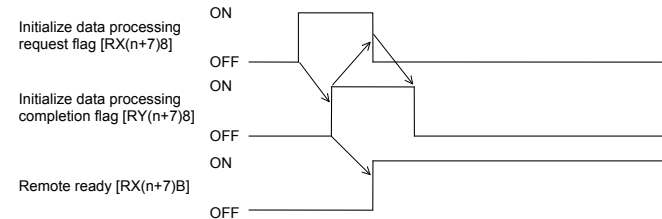
6	7	8	
OFF	OFF	OFF	Fixed

3. CC-Link FLAG OPERATION

Remote input/output and remote register flag operations are as follows.
[Example] When the occupied station/extended cyclic of COM-JC is set to 4 stations occupied 1 time.

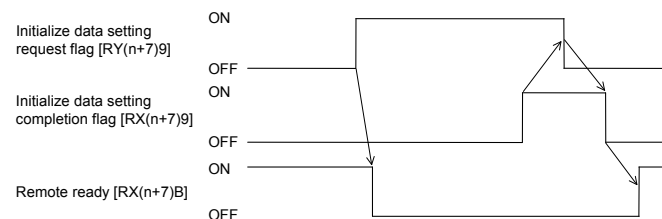
Initialize request processing at power on

- Initialize processing request from remote device station (COM-JC)**
If the COM-JC 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-JC becomes a ready state, a remote ready [RX(n+7)B] is turned on.



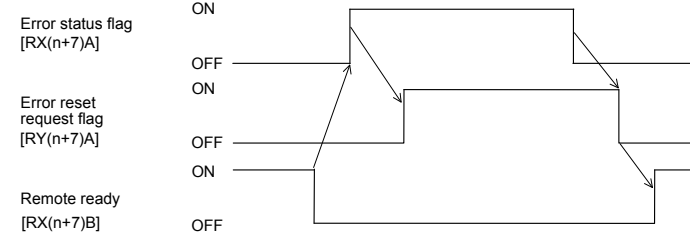
- Initialize processing request from master station (PLC)**

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



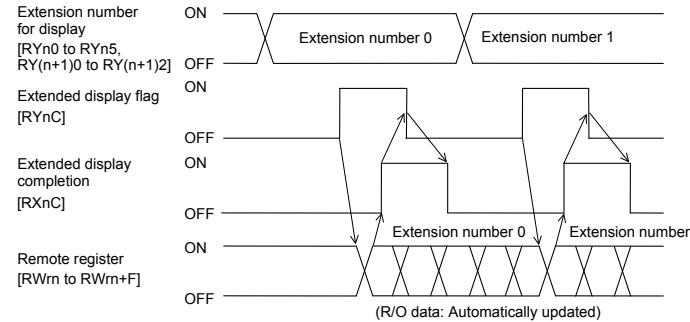
Error flag/error reset processing

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.



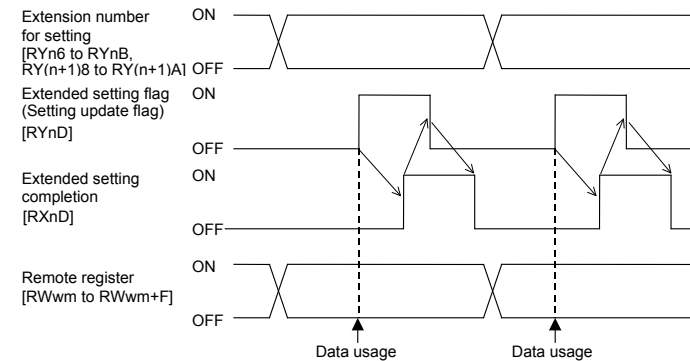
Extension number for display selection processing

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 [RWm to RWm+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

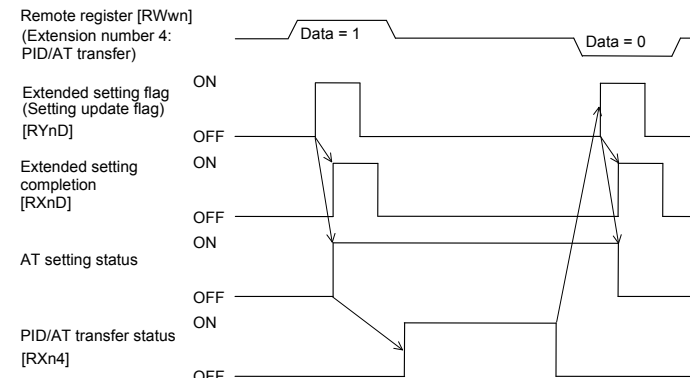
The content of the extended setting remote register is selected and the set value is changed. After the extension number for setting [RYn6 to RYnB, RY(n+1)8 to RY(n+1)A] is set, turn on the extended setting flag [RYnD]. After the content of the remote register [RWm to RWm+F] is set, check that extended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



Regardless of the number of occupied stations 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.



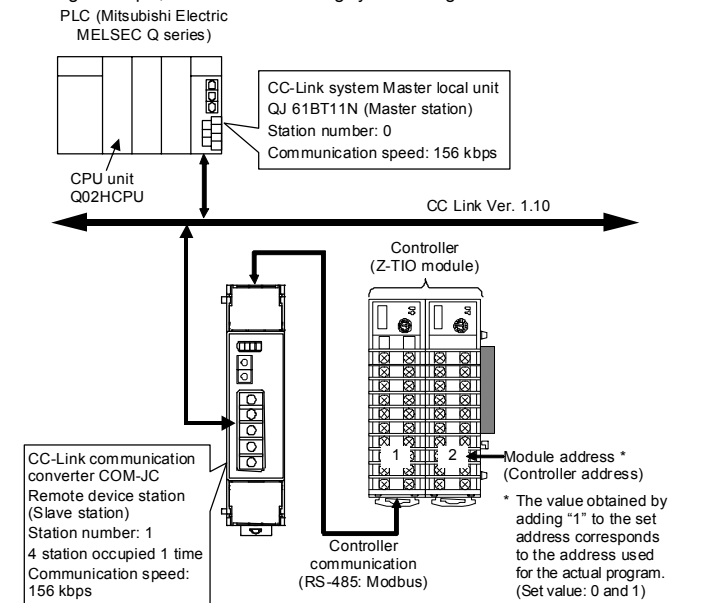
For remote input/output and remote register, refer to **COM-JC [For SRZ] Communication Data List (IMR01Y30-E0)** or **COM-JC [For SRZ] Instruction Manual (IMR01Y34-E0)**.

4. USAGE EXAMPLE

A usage example of CC-Link communication is described in the following.

4.1 System Configuration

In this usage example, described the following system configuration.



Use instruments

- CC-Link communication converter: COM-JC.....1
- Controller (SRZ): Z-TIO module (4 channels type).....2
- Mitsubishi PLC MELSEC Q series
 - CPU unit: Q02HCPU
 - CC-Link system master local unit: QJ 61BT11N
- CC-Link dedicated cable Ver. 1.10
- COM-JC and controller connection cable

4.2 Setting the Instruments Used

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

PLC setting

For operation of the CC-Link system master local unit QJ61BT11N and MELSEC sequencer programming software GX Developer, refer to Instruction Manual of PLC.

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

Setting item	Setting value
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-JC connection: 1, Station number: 1)	Station type: Remote device station Expanded cyclic setting: Single Number of occupied stations: Occupies 4 stations Remote station points: 128 points Reserved/invalid station select: No setting Intelligent buffer select (word): No setting

Setting item	Setting value
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-JC 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 speed: 19200 bps (Factory set value)
- For setting method, refer to 2. COMMUNICATION SETTING.

Controller (Z-TIO module) setting

[Controller communication conditions]

- Protocol: Modbus
- Module address: 1 and 2 (Set value: 0 and 1)
- Communication speed: 19200 bps (Factory set value)
- Data bit configuration: Data 8-bit, Without parity bit, Stop 1-bit

For setting method, refer to Z-TIO Host Communication Quick Instruction Manual (IMS01T02-ED).

4.3 Device Assignment Example

According to the contents set by 4.2 Setting the Instrument Used, each device is assigned.

Assignment conditions

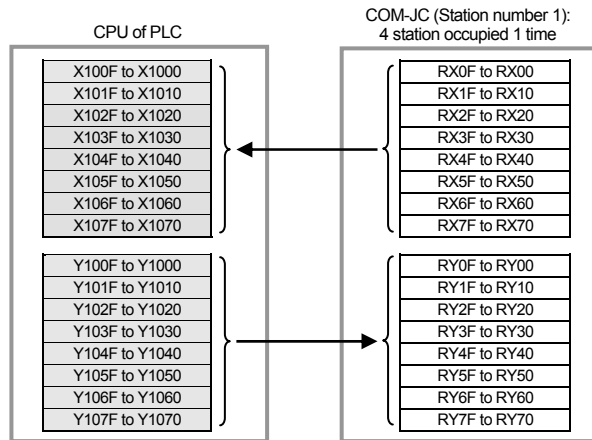
COM-JC station number: 1

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

Automatic refresh device setting

Remote input (RX): X1000 Remote output (RY): Y1000
Remote register (RW): W0 Remote register (RWw): W100
Special relay (SB): SB0 Special register (SW): SW0

Remote input (RX) and remote output (RY)



□ : The device that a controller actually uses

Device assignment table of remote input (RX)

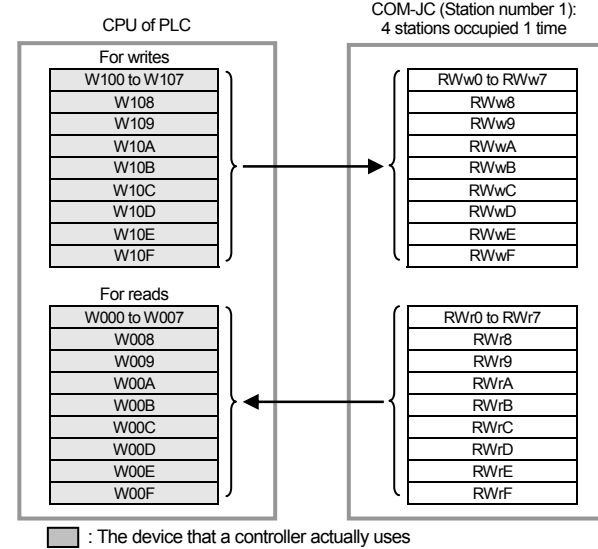
CPU device number	Communication item	Remote input (RX) address
X1000	CH1 Event 1 state	RX00
X1001	Event 2 state	RX01
X1002	Burnout state	RX02
X1003	Heater break alarm (HBA) state	RX03
X1004	PID/AT transfer	RX04
X1005 to X1009	CH2 Same as CH1	RX05 to RX09
X100A, X100B	Unused	RX0A, RX0B
X100C	Extended display completion	RX0C
X100D	Extended setting completion	RX0D
X100E	Unused	RX0E
X100F	Hardware error flag	RX0F
X1010 to X101F	Reserved	RX10 to RX1F
X1020 to X1024	CH3 Same as CH1	RX20 to RX24
X1025 to X1029	CH4 Same as CH1	RX25 to RX29
X102A to X102E	CH5 Same as CH1	RX2A to RX2E
X102F to X1033	CH6 Same as CH1	RX2F to RX33
X1034 to X1038	CH7 Same as CH1	RX34 to RX38
X1039 to X103D	CH8 Same as CH1	RX39 to RX3D
X103E to X103F	Unused	RX3E to RX3F
X1070 to X1077	Reserved	RX70 to 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 to X107F	Reserved	RX7C to RX7F

Device assignment table of remote output (RY)

CPU device number	Communication item	Remote output (RY) address
Y1000 to Y1005	Bit 0 to Bit 5 Extension number for display	RY00 to RY05
Y1006 to Y100B	Bit 0 to Bit 5 Extension number for setting	RY06 to RY0B
Y100C	Extended display flag	RY0C
Y100D	Extended setting flag	RY0D
Y100E	Unused	RY0E
Y100F	RUN/STOP transfer	RY0F

CPU device number	Communication item	Remote output (RY) address
Y1010 to Y1017	Bit 6 to Bit 13 Extension number for display (Bit 9 to Bit 13: Unused)	RY10 to RY17
Y1018 to Y101F	Bit 6 to Bit 13 Extension number for setting (Bit 9 to Bit 13: Unused)	RY18 to RY1F
Y1020 to Y1027	Bit 0 to Bit 7 Area number for display (Bit 4 to Bit 7: Unused)	RY20 to RY27
Y1028 to Y102F	Bit 0 to Bit 7 Area number for setting (Bit 4 to Bit 7: Unused)	RY28 to RY2F
Y1030 to Y106F	Unused	RY30 to RY6F
Y1070 to Y1077	Reserved	RY70 to RY77
Y1078	Initialize data processing completion flag	RY78
Y1079	Initialize data setting request flag	RY79
Y107A	Error reset request flag	RY7A
Y107B to Y107F	Reserved	RY7B to RY7F

Remote register (RW, RWw)



□ : The device that a controller actually uses

Device assignment table of remote register (RWw)

CPU device number	Communication item	Remote register (RWw) address
W100 to W107	Set value (SV) of CH1 to CH8	RWw0 to 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 (RW)

CPU device number	Communication item	Remote register (RW) address
W000 to W007	Measured value (PV) of CH1 to CH8	RWr0 to 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

4.4 Sample Program

Program conditions

COM-JC station number: 1
Number of occupied station/extended cyclic: 4 stations occupied 1 time (8 channels assignment)

Automatic refresh device assignment:

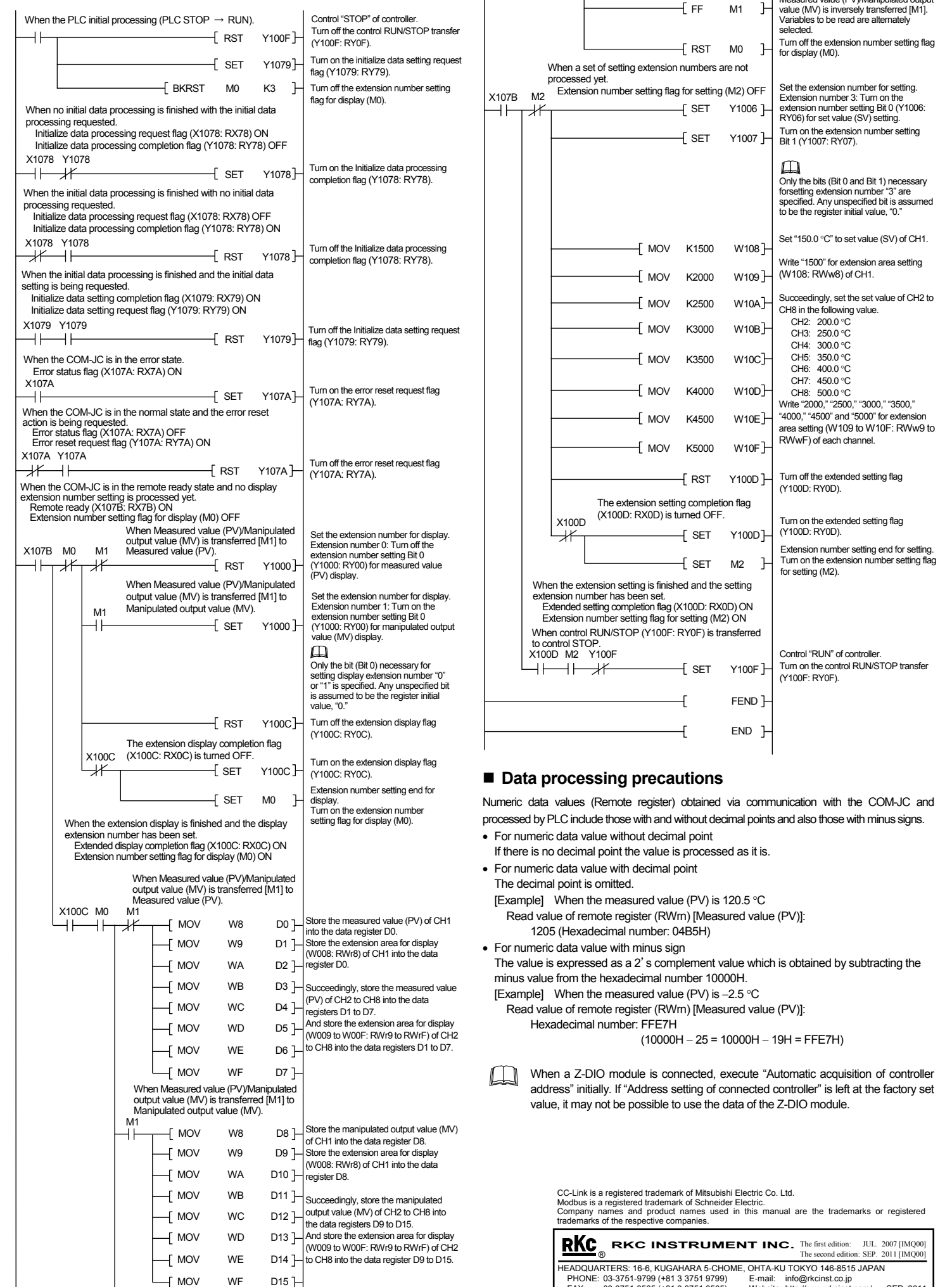
Refer to 4.3 Device Assignment Example
Special relay (M) assignment: M0: Extension number setting flag for display
M1: Measured value (PV)/Manipulated output value (MV) transfer

Data register (D) assignment: D0 to D7: Measured value (PV) storage of CH1 to CH8
D8 to D15: Manipulated output value (MV) storage of CH1 to CH8

Program operation

- Store measured value (PV) and manipulated output value (MV) to a data register.
- Write in set value (SV) of CH1 to CH8.
CH1 set value (SV): 150.0 °C CH5 set value (SV): 350.0 °C
CH2 set value (SV): 200.0 °C CH6 set value (SV): 400.0 °C
CH3 set value (SV): 250.0 °C CH7 set value (SV): 450.0 °C
CH4 set value (SV): 300.0 °C CH8 set value (SV): 500.0 °C
- Change the controller to the control RUN.

Sample program



Data processing precautions

Numeric data values (Remote register) obtained via communication with the COM-JC and processed by PLC 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.
- For numeric data value with decimal point
The decimal point is omitted.

[Example] When the measured value (PV) is 120.5 °C
Read value of remote register (RWm) [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) is -2.5 °C
Read value of remote register (RWm) [Measured value (PV)]:
Hexadecimal number: FFE7H
(10000H - 25 = 10000H - 19H = FFE7H)

When a Z-DIO module is connected, execute "Automatic acquisition of controller address" initially. If "Address setting of connected controller" is left at the factory set value, it may not be possible to use the data of the Z-DIO module.