3. COMMUNICATION SETTING OF Z-COM MODULE

Set communication settings before mounting and using the Z-COM.

CAUTION

Do not turn on the module mains from the base with the power turned on. If you do, your instrument failure may result.

3.1 Unit Address Setting

Set address on each module.

\[ \text{Address setting} = \begin{cases} 0 \text{ to F} & \text{Factory set value} \\ \text{Unit address} \text{(10-digits)} \end{cases} \]

3.2 Protocol Selections and Communication Speed Setting

Use the DIP switch ON/OFF setting to select the Communication speed, Communication protocol and Data bit configuration. Because PLC communication is performed in this example, configure communication protocol (24-P-0039-0002) and Communication speed (24-P-0039-0001).

3.3 Address setting for PLC communication

Up to 8 Z-COM modules can be connected to a PLC communication port. Therefore, the unit address sets for each Z-COM module on a group. For Z-COM modules which are required to be connected to the PLC, the unit address numbers assigned to any of four groups shown in the following table as their addresses.

3.4 Address setting for Loader communication

When Loader communication is performed, the host computer and SRZ unit communicate on a one-to-one basis, and the unit address is set to "0." Even when address setting switch is set to other than 0, communication is performed with unit address 0.

4. COMMUNICATION SETTING OF FUNCTION MODULES

4.1 Address Setting of Z-TIO2-DIO Module

Only module address setting of Z-TIO2-DIO module is required to make the communication. The Z-TIO2-DIO module performs communication (RS-485) between the Z-COM module and the function module. The data change becomes valid when the power of the Z-COM module is turned on again or when control is switched from STOP to RUN.

4.2 For the SRZ Unit's Temperature Control Channel

The configuration 7 module address determines the temperature control channel number used for communication. To each Z-TIO2-DIO module address, the relevant temperature control channel is assigned. Each temperature control channel number can be calculated from the following formula.

\[ \text{Temperature control channel number} = \text{Z-TIO2-DIO module address} + \frac{\text{Maximum channel number of the function module A}}{2} \]

Example: When 3 Z-TIO2-DIO modules are joined

\[ \text{Z-TIO2-DIO module address} = 0 \text{ to } F \]

\[ \text{Temperature control channel number} = 0 \text{ to } 15 \]

5. PLC COMMUNICATION ENVIRONMENT SETTING

The PLC communication environment system data settings shall be made to perform PLC communication. The system data settings are made by the Loader communication (System data settings) and Host communication (System data settings). The settings are made in the PLC register. For details, refer to the following manual:

- Z-COM Instruction Manual (IMS01T22-E)
- Z-COM Host Communication Instruction Manual (IMS01T23-E)
- Z-TIO Host Communication Quick Instruction Manual (IMS01T02-E)
- SRZ Instruction Manual (IMS01T04-E)
- Z-COM PLC Communication Data List (IMS01T15-E)

5.1 Preparation of USB Communication Converter

To perform Loader communication, our converter and a communication cable are required. For details, refer to the following manual:

- USB communication converter (COM-K) (With USB cable) *
- Loader communication cable W-BV-01 [optional]
- USB communication converter (COM-K) (With USB cable) *
- Loader communication cable W-BV-01 [optional] *

5.2 Preparation of Communication Program

RNC can provide communication program "PROTENG" or "WINSCSI (F-RX)" (Free of charge).

For the RNC communication, refer to the following manual:

- PLC-5 communication instruction (IMS01T24-E)
- USB communication converter (COM-K) (With USB cable) *
- USB communication converter (COM-K) (With USB cable) *

5.3 Setting of Loader Communication

The communication settings of the host computer are set in the Z-COM module. Set the communication settings of the host computer only after the Loader communication is configured. For details, refer to the following manual:

- Z-COM Host Communication Instruction Manual (IMS01T23-E)
- USB communication converter (COM-K) (With USB cable) *
- USB communication converter (COM-K) (With USB cable) *

5.4 Connection for Loader Communication

Connect SRZ unit to the parallel computer. When the personal computer has USB converter, connect the USB communication converter between the parallel computer and the Z-COM module.
5.5 Setting of System Data (setting items)

1. Turn on the power of PLC and SRZ unit.
2. On the personal computer, set the communication data of PLC communication environment indicated below.
3. Change each set value of SRZ unit from the PLC after the initial settings are made.

Communication setting data of Z-COM module

Z-COM settings of Communication speed. Communication protocol and Data link configuration can be set even by the Load configuration program.

Set switch No. 1 to "ON" when performing the communication settings via host communication or Loader communication. When set to "OFF", the DIP switch settings are disabled.

If you changed the communication setting data, the data change become valid the power of the Z-COM module is turned on again or when another switch is switched from STOP to RUN.

<table>
<thead>
<tr>
<th>Name</th>
<th>Communication protocol</th>
<th>Modbus register address range</th>
<th>Data range and number of data</th>
<th>Factory set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RKC</td>
<td>Standard</td>
<td>0x0000 to 0x0FFF</td>
<td>16-bit data</td>
<td>0</td>
</tr>
<tr>
<td>RKC</td>
<td>Extension</td>
<td>0x1000 to 0x1FFF</td>
<td>32-bit data</td>
<td>0</td>
</tr>
</tbody>
</table>

Note 1: MITSUBISHI PLC and OMRON PLC: 0
YOKOGAWA PLC: 1

Note 2: MITSUBISHI PLC: 255
YOKOGAWA PLC: 1

1 This item is not used for the OMRON SYSMAC series.
2 Only when the DP switch is selected
3 Use the factory set value when the PLC and SRZ units are connected over a network.
4 In this example, set the factory set value.

5 Turn the SRZ unit's power OFF and ON again. When the power is turned ON, the changed System data values are enabled.

6. PLC COMMUNICATION SETTING

Select the communication items of PLC side.

The setting items are A. The details of the setting procedure for the PLC, refer to the instruction manual for the PLC being used.

7. PLC COMMUNICATION DATA TRANSFER

This data exchanged between the PLC and the SRZ units is completed in the PLC communication data map. In PLC communication environments, the communication data is classified into System data (master items), Request commands, Monitor groups, and Setting groups.

For the PLC communication data map, refer to the Z-COM PLC Communication Data List

7.1 Data Transfer Type

Data transfer between PLC and SRZ unit is executed by Request command. For the Request command, both Setting request bit and Monitor request bit are available.

- Setting request bit (PLC -> SRZ)

This command requests that the SRZ unit read the communication data of the Setting group on the PLC side.

(1) Just when "1" is set to the Setting request bit, the SRZ unit starts reading the data from the PLC side.
(2) All data of the setting communication group is transferred from PLC to the SRZ unit.
(3) After data transmission is completed, the Setting request bit becomes "0."

- Monitor request bit (PLC -> SRZ)

This command requests the SRZ unit write the communication data of the Setting group on the PLC side.

(1) Just when "1" is sent to the Monitor request bit, the SRZ unit starts reading the data from the PLC side.
(2) All data of the setting communication group is transferred from SRZ unit to the PLC.
(3) After data transmission is completed, the Monitor request bit becomes "0."

Monitor group

The Monitor group communication data is always transferred as monitor data between the PLC and the SRZ unit regardless of the Request command setting.

7.2 Data Transfer Procedures

Change each value of SRZ unit from the PLC after the initial settings are made.

Each set value of SRZ unit is changed from the PLC without setting the initial values, it is re-written to "0" with each set value of the PLC at that time sent to "0."

- Initial setting

- Data setting

When the Setting group communication data is transferred from PLC to the SRZ unit.

- Setting request bit (SRZ -> PLC)

This event is triggered when the PLC register's Setting request bit is set to "1" the SRZ unit begins reading the data set in the register (memory) on the PLC side.

- Monitor request bit (SRZ -> PLC)

This event is triggered when the PLC register's Monitor request bit is set to "1", the PLC begins writing the Setting group data to the PLC.