2. HANDLING PROCEDURES

A handling procedure is shown in the following when the COM-JH is connected to a PLC as a master.

3. COMMUNICATION SETTING

3.1 Node Address Setting

To identify each device connected to the network, it is necessary to set a different address to each device (node). For the DeviceNet, as it is possible to connect up to 64 devices including a master to the network, node address (MAC ID) from 0 to 63 can be set.

For this setting, use a small blade screwdriver.

3.2 DeviceNet Communication Speed Setting

Set a communication speed for the DeviceNet using a small blade screwdriver.

3.3 DIP Switch Setting

With the DIP switch which there is on the left side of the front panel, set the controller communication speed and set the number of communication data items when conducting DeviceNet Polling I/O communication.

4. COMMUNICATION ENVIRONMENT SETTING

Set communication environment of Polling I/O communication of DeviceNet by using the Node address setting switch and the DeviceNet communication speed setting switch which are the rotary switch of the COM-JH.

Setting procedure
1. Turn off the power supply.
2. Before communication environment, record the switch positions of Node address setting switch and DeviceNet communication speed setting switch. (When this module is used for the first time, no recording required.)
3. Set all the values of a Node address setting switch and a DeviceNet communication speed setting switch.
4. Turn on the power supply to the module to the Communication environment setting mode. If set to the Communication environment setting mode, the RUN lamp goes off and the FAIL lamp flashes. The module turns on the power supply.
5. Select a setting item number with an LED of the Node address setting switch, and set data of the Node address setting switch.
6. Set the DeviceNet communication speed setting switch in the order of “0,” “1,” and “2.”
7. Repeat the steps from 3 to 6, of above, set other setting items.
8. First check that the RUN lamp goes off, and then turn the power off.
9. Return the switch positions of Node address setting switch and DeviceNet communication speed setting switch to the already recorded.
10. Turn on the power again.

The set data value if the power is turned on again.

List of communication environment setting items

<table>
<thead>
<tr>
<th>Node address setting switch</th>
<th>Controller communication speed setting switch</th>
<th>Factory set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>OFF</td>
<td>38400 bps</td>
</tr>
<tr>
<td>1</td>
<td>OFF</td>
<td>57600 bps</td>
</tr>
<tr>
<td>2</td>
<td>OFF</td>
<td>115200 bps</td>
</tr>
<tr>
<td>1</td>
<td>ON</td>
<td>102000 bps</td>
</tr>
<tr>
<td>2</td>
<td>ON</td>
<td>202000 bps</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>409200 bps</td>
</tr>
</tbody>
</table>

Switch No. 3, 7, and 8: OFF fixed. (Don’t change this one)

The number of communication data items when conducting Polling I/O communication can also be set via Explicit message communication, or by the configuration tool or rotary switch. However, when the number of communication data items is set via Explicit message communication, or by the configuration tool or rotary switch, the value set by the DIP switch may be ignored.

For the number of communication data items when conducting Polling I/O communication, refer to 4. COMMUNICATION ENVIRONMENT SETTING.
5. POLLING I/O COMMUNICATION

COM-JH has supported Polling I/O communication and Explicit message communication as a communication method of DeviceNet. Details of Polling I/O communication are shown below.

**Communication outline**

Polling I/O communication is the communication that master and slave always execute transmission and reception of data. Set the following items before communication start.

- Communication setting (items and measured items)
- Number of communication controllers
- Number of communication data items

Polling mode enables the following data items to be read or written via Polling I/O communication.

**Request: setting data items (OUT)**

A master transmits data of the following for slave (COM-JH).

COM-JH communication (data setting items) contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Data range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RUN/STOP data (Controller 1 to 16)</td>
<td>Bit 0 to 15: RUN/STOP setting* (Controller 1 to 16)</td>
</tr>
<tr>
<td>2</td>
<td>RUN/STOP data (Controller 17 to 31)</td>
<td>Bit 0 to 15: RUN/STOP setting* (Controller 17 to 31)</td>
</tr>
</tbody>
</table>

**Response: measured data items (IN)**

A slave transmits the following data to a master (COM-JH).

COM-JH communication (data measured items) contents

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Data range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alarm state (Controller 1 to 16)</td>
<td>Bit data</td>
</tr>
<tr>
<td>2</td>
<td>Alarm state (Controller 17 to 31)</td>
<td>Bit data</td>
</tr>
<tr>
<td>3</td>
<td>Alarm state (Controller 1 to 31, Setting update flag)</td>
<td>Bit data</td>
</tr>
</tbody>
</table>

### 6. APPLICATION EXAMPLE

An example of using DeviceNet communication is explained when the COM-JH is connected to a PLC as a master.

6.1 System Configuration

This application example is described according to the following system configuration.

- **COM-JH** (Slave)
  - DeviceNet address: 1
  - Node address: 1

- **OMRON SYSMAC CJ series**
  - PLC (Master)
  - Node address: 0
  - RUN/STOP flag

- **DeviceNet communication converter (FB400)**
  - Comme: CPU unit
  - CJM: DeviceNet master unit: CJ-WV-DR/D

**Use instruments**

- **DeviceNet communication converter:** COM-JH
- **Controller:** (temperature controller) FB400

**Response: measured data items (IN)**

- **Polling I/O communication**
  - Node address: 0
  - Communication data speed: 125 kbps
  - Decimal number: 0

### 6.2 Setting of Use Instruments

Setting of the PLC, COM-JH and controller is shown in the following.

**PLC setting**

- **DeviceNet communication requirement**
- **Node address:** 0
- **Communication data speed:** 125 kbps
- **Decimal number:** 0

- **Communication cycle time:**
  - PLC: 0.625 (COM-JH communication data items: 1.2 to 50 [ms] or more + 7.1 to 50.8 [ms] or more)

**For setting procedure, refer to PLC instruction Manual.**

**COM-JH setting**

- **DeviceNet communication requirement**
- **Node address:** 1
- **Communication data speed:** 125 kbps
- **Decimal number:** 0

**For setting procedure, refer to 3. COMMUNICATION SETTING.**

**Controller (FB400) setting**

- **Controller communication requirement**
- **Communication data speed:** 125 kbps
- **Decimal number:** 0

**Contents of communication parameter setting**

- **Status data:**
- **Data format:**
- **Communication cycle time:**
- **Decimal number:**

**For setting procedure, refer to FB400/OMRON Communication Quick Manual**

**6.3 Details of Communication**

The following shows the details of communication when conducting communication via Polling I/O communication.

- **Polling I/O communication is called Remote I/O communication in OMRON PLC related instruction manuals.**

**Sample program (ladder)**

1. Response: measured data items (IN)

- **Measured data items (IN)**

**Number of communication data items**

- **Number of communication controllers**

2. **For setting procedure, refer to COM-JH [For FB100/FB400/FB500] Instruction Manual (MR01Y09-E).**