2.1 Installation

The FX2NC-1HC can be installed on a DIN46277 rail (35 mm (1.38") wide).

2.2. Number of the connectable units

- One model can be installed on each DIN46277 rail. A maximum of 91 FX2NC series units can be set up on one DIN46277 rail (91 units x 24 mm (0.94") pitch = 2204 mm (86.7"))
- The FX2NC-1HC can be set on the DIN46277 rail side by side with the FX2NC series unit. However, the space between each FX2NC-1HC and the FX2NC series unit should be at least 24 mm (0.94")

2.3 Wiring

- Connect the FX2NC-1HC to the PLC.
- Make sure to observe the following precautions in order to prevent any damage to the device or to the external devices connected to it.

- Connect the FX2NC-1HC and PLC in such a way that they are electrically isolated from each other.

2.4 View Points

- When installing the FX2NC-1HC, do not connect the power supply terminals to the power supply and the control terminals to the control.
- When connecting the FX2NC-1HC to the PLC, make sure to check the following points:
  - Ensure that the FX2NC-1HC is securely connected to the PLC.
  - Check the wiring to ensure that it is correct.

3. Wiring

- Make sure to use all of the output points, even if they are not being used.

4. Specifications

4.1 General Specifications

- The FX2NC-1HC is designed to be used with the FX2NC series PLC. For general specifications, refer to the manual of the PLC's main unit.

4.2 Power Supply Specifications

<table>
<thead>
<tr>
<th>Input power source</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 24 V DC</td>
<td>-</td>
</tr>
</tbody>
</table>

5. Buffer Memory

5.1 Buffer Memory List

- [ ] When using the buffer memory, confirm that the buffer memory (FM) are as follows:
  - [ ] When using the buffer memory (FM), confirm that the buffer memory (FM) are as follows:
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  - [ ] When using the buffer memory (FM), confirm that the buffer memory (FM) are as follows:
  - [ ] When using the buffer memory (FM), confirm that the buffer memory (FM) are as follows:
The FX2NC-1HC is a Programmable Controller (Open Type Equipment) designed for use in industrial applications. This product is intended to be used as directed by the appropriate documentation. The FX2NC-1HC occupies 8 points of I/O on the FX2NC, FX3UC expansion bus. The FX2NC-1HC can be used as an extension block. The FX2NC-1HC can be used as an extension block.

2.1 Installation

The FX2NC-1HC can be installed on a DIN rail (20 mm or 35 mm) with the stated number of units connected to the terminal. When connecting the FX2NC-1HC, the FX2NC-1HC shall be connected to the terminal as shown in the figure. When connecting to the panel (a DIN rail), the FX2NC-1HC shall be connected to the terminal as shown in the figure.

2.2 Number of the connectable units

When connecting, the FX2NC-1HC shall be connected to the terminal as shown in the figure. When connecting to the panel (a DIN rail), the FX2NC-1HC shall be connected to the terminal as shown in the figure.

3. Wiring

Care should be taken to make sure all connections are made correctly and securely. The instruction manual should also be made available to the user.

3.1 Wiring and Terminal/Tightening Torque

1) For output signals that may lead to serious accidents, external circuits and microswitch circuits should be designed to ensure safety by using microswitch circuits in each case.

3.2 Terminal/Tightening Torque

1) Be careful not to lose the terminal block when reusing.

4. Specifications

4.1 General Specifications

The FX2NC-1HC is a Programmable Controller (Open Type Equipment) designed for use in industrial applications. The FX2NC-1HC is a Programmable Controller (Open Type Equipment) designed for use in industrial applications.

4.2 Power Supply Specifications

The FX2NC-1HC is a Programmable Controller (Open Type Equipment) designed for use in industrial applications. The FX2NC-1HC is a Programmable Controller (Open Type Equipment) designed for use in industrial applications.
5.2 Details of buffer memories

5.2.1 Counter mode [BFM #0]
The counter mode is shown in the upper right table. (Default value: K2)

[Table showing different counter modes with values and descriptions]

5.2.2 Ring length [BFM #4, K2, K1]
When setting the counter mode (BFM #0), other BFM(s) have to be setup.

Note:
- 16-bit counter modes: K0, K11, 1), 7)
- 32-bit counter modes: K4, K22, 2)

5.2.3 Coincidence output [BFM #0, K2]

5.2.4 Compare results [BFM #0, K2]

5.2.5 Terminal status [BFM #27]

5.2.6 Memory count value [BFM #0, K2, K1]

6. Example Program

Please see the following programs as a guide whenever you use the FX2NC-16EX(-DS), FX2NC-32EX(-DS)softw...
### 3.2 Details of buffer memories

#### 3.2.1 Counter mode (K0, K1, K2, K3, K4, K5)

The counter mode is shown in the upper right-hand section (Default value: K2).

<table>
<thead>
<tr>
<th>Counter mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0</td>
<td>1-phase 1-input counter (K0, K1)</td>
</tr>
<tr>
<td>K1</td>
<td>1-phase 1-input counter (K0, K1)</td>
</tr>
<tr>
<td>K2</td>
<td>2-phase counter [1 edge-count] (K0, K1)</td>
</tr>
<tr>
<td>K3</td>
<td>2-phase counter [2 edge-count] (K2, K3)</td>
</tr>
<tr>
<td>K4</td>
<td>32-bit counter modes</td>
</tr>
<tr>
<td>K5</td>
<td>64-bit counter modes</td>
</tr>
</tbody>
</table>

#### 3.2.2 Ring length (K0, K1, K2, K3)

This determines the number of clock cycles for the counter to count up/down to zero when the counter is counting up/down.

<table>
<thead>
<tr>
<th>Ring length (K0, K1, K2, K3)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 clock cycles</td>
</tr>
<tr>
<td>1</td>
<td>1 clock cycle</td>
</tr>
<tr>
<td>2</td>
<td>2 clock cycles</td>
</tr>
<tr>
<td>3</td>
<td>3 clock cycles</td>
</tr>
<tr>
<td>4</td>
<td>4 clock cycles</td>
</tr>
</tbody>
</table>

#### 3.2.3 Setting value (K0, K1, K2, K3)

This sets the initial value of the counter when the counter is reset.

<table>
<thead>
<tr>
<th>Setting value (K0, K1, K2, K3)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>+1</td>
<td>+1</td>
</tr>
<tr>
<td>-1</td>
<td>-1</td>
</tr>
</tbody>
</table>

### 3.3 Count modes

#### 3.3.1 UP/DOWN counter (K0, K1, K2, K3)

This counter mode allows the counter to count up and down.

#### 3.3.2 16-bit binary counter (K0, K1)

This counter mode allows the counter to count up to the upper limit value and back down to the lower limit value.

<table>
<thead>
<tr>
<th>16-bit binary counter (K0, K1)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>+2,147,483,647</td>
<td>+2,147,483,647</td>
</tr>
<tr>
<td>-2,147,483,647</td>
<td>-2,147,483,647</td>
</tr>
</tbody>
</table>

### 3.4 Count modes (K0, K1, K2, K3)

#### 3.4.1 16/32-bit counter (K0, K1, K2, K3)

This is a software UP/DOWN counter.

#### 3.4.2 1-phase 1-input counter (K0, K1)

This counter mode is for counting input pulses when a single input is connected.

#### 3.4.3 2-phase counter (K0, K1, K2, K3)

This counter mode is for counting input pulses when two inputs are connected.

#### 3.4.4 32-bit counter modes (K0, K1, K2, K3)

This is a 32-bit counter mode for counting input pulses when multiple inputs are connected.

### 3.5 Buffer memories

#### 3.5.1 Buffer memories (K0, K1, K2, K3)

These are the buffer memories for storing the set value, current value, and status of the counter.

### 3.6 Diagnostics

#### 3.6.1 Terminal status (K0, K1, K2, K3)

This displays the status of the counter, including the count value, status, and error status.

#### 3.6.2 Buffer memories (K0, K1, K2, K3)

These are the buffer memories for storing the set value, current value, and status of the counter.

### 3.7 Example program

#### 3.7.1 Counter value (K0, K1, K2, K3)

This example program shows how to use the counter to perform a specific task.

### 3.8 System block diagram

#### 3.8.1 System block diagram (K0, K1, K2, K3)

This diagram shows the connections and signals used in the counter system.

---

Note: This manual is for Chinese only.
1. Outline

The high-speed open-collector output is a pull-up/down output type. It is a high-speed output type of the FX2NC series. When using the FX2NC instruction, be sure to check the instruction (B) WITH instruction.

* FX2NC instruction output instruction (PLC-UC 103) in each output instruction. The last output instruction command is output 3 points can be obtained from other inputs or outputs.

* Different types of output, such as output power supply, output interface, and output interface, are available. There must be an output power supply for this type of output interface. This output interface is a complete set of the output interface modules. The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

* FX2NC-1HC installation

1.1 Incorporated Items

* The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

* The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

2. Specifications

2.1 PIN output interface

* When using the FX2NC instruction, be sure to check the instruction (B) WITH instruction.

* FX2NC instruction output instruction (PLC-UC 103) in each output instruction. The last output instruction command is output 3 points can be obtained from other inputs or outputs.

3. Wiring

3.1 Cable

* It is recommended to use a 5V DC power supply for the FX2NC Series PLC including those connected to the FX 2NC-CNV-IF or FX2NC Series PLC including those connected to the FX2NC-CNV-IF.

* The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

4. Specifications

4.1 General Specifications

* The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

4.2 Power Supply Specification

* The FX2NC-1HC has two outputs. When the counter value coincides with an output, the LED is turned on. When using the FX2NC instruction, the output power supply may be turned on or off.

5. Buffer Memory (BFM)

5.1 Buffer memory List

* When using a serial buffer (BFM) in the FX2NC-1HC, the BFM 1 to 40 will be allocated in the FX2NC-1HC. When the buffer memory list is used, the buffer memory list is set to 1 to 40.

6. PLC specifications for I/O, wiring, installation, and maintenance.
5.2 Details of buffer memories

5.2.1 Counter mode [BFM #0]
The counter mode is shown in the upper right table. (Default value: K0)

<table>
<thead>
<tr>
<th>Setting Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0</td>
<td>OFF (0)</td>
</tr>
<tr>
<td>K1</td>
<td>SET (1)</td>
</tr>
<tr>
<td>K2</td>
<td>CLR (2)</td>
</tr>
<tr>
<td>K3</td>
<td>RST (3)</td>
</tr>
<tr>
<td>K4</td>
<td>ENABLE (4)</td>
</tr>
</tbody>
</table>

5.2.2 Direction Selecting Value [BFM #2]
The direction selecting value is shown in the upper right table. (Default value: K0)

<table>
<thead>
<tr>
<th>Setting Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0</td>
<td>OFF (0)</td>
</tr>
<tr>
<td>K1</td>
<td>SET (1)</td>
</tr>
<tr>
<td>K2</td>
<td>CLR (2)</td>
</tr>
<tr>
<td>K3</td>
<td>RST (3)</td>
</tr>
<tr>
<td>K4</td>
<td>ENABLE (4)</td>
</tr>
</tbody>
</table>

5.2.3 Ring length [BFM #3, #2]
When setting the upper limit value of the 16 bit counters, the setting range is K2 to K31. For pulse outputs, the upper limit value is limited to between 0 and 65,535. Values outside this range will be set to 65,535. For more information about the BFM #3, #2, refer to the Subsection 5.2.3.1

5.2.4 Count mode [BFM #4, #3]
When using the counter function, the counter mode is set by writing a 32-bit value into the appropriate buffer memory.

- **BFM #3**
  - K1: UP/DOWN mode
  - K2: 16/32-bit counter
  - K3: 2-phase counter
  - K4: Command (BFM #4)

- **BFM #4**
  - K0: Count (permit) 0 (prohibit)
  - K1: YH Output (permit) 1 (prohibit)
  - K2: YS Output (permit) 1 (prohibit)
  - K3: YH Output (prohibit) 0 (permit)
  - K4: YS Output (prohibit) 0 (permit)

5.2.5 Count pulse [BFM #0, #2]
When the counter mode is set to UP/DOWN and the pulse output is enabled by the BFM #0 or #2, the counter is incremented or decremented on each pulse input.

5.2.6 YH compare value [BFM #13, #12]
When the counter mode is set to UP/DOWN or YH compare value, the value of the counter is compared with the set value. When a match occurs, the output goes high. For more information, refer to the Subsection 5.2.6.1.

5.2.7 Comparator counter value [BFM #21, #20]
The counter value of the 16-bit counter can be read by writing a 32-bit value into the appropriate buffer memory. For more information, refer to the Subsection 5.2.7.1.

5.2.8 Maximum counter value [BFM #31, #30]
The maximum counter value of the 16-bit counter can be read by writing a 32-bit value into the appropriate buffer memory. For more information, refer to the Subsection 5.2.8.1.

6. Example Program

Please refer to the following programs as a guide when using the FX2NC-1HC.

```
; Initial block
LD M8000
OUT X000

; Input block
IN X010
IN X011

; Output block
OUT Y000
OUT Y001
```

7. Preliminary checks

1. Check that the I/O wiring and extension cable of the FX2NC-1HC are properly connected.

2. Set the BFM #0 to OFF (0) and the BFM #1 to #31 to K0 (OFF).

3. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

4. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

5. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

6. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

7. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

8. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

9. Set the BFM #0 to K2 (16 bit counter) and the BFM #1 to #31 to K0 (OFF).

8. Diagnostics

- **Caution:** Do not disassemble or modify the PLC. This may cause damage or malfunction.

- **Precautions:** Please refer to the manual for maintenance and troubleshooting.

9. System Block Diagram

```
System Block Diagram
```

10. Technical notes

- **Instruction Manual:** Please refer to the technical notes in the instruction manual for more information.

- **Software:** The software for the FX2NC-1HC is compatible with Mitsubishi PLCs. Please refer to the software documentation for more information.

- **For users:** Please refer to the user manual for more information.

This manual contains all the necessary information for using and maintaining the FX2NC-1HC. Please refer to the manual for more information.

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