Controller with EtherNet/IP™ Interface

CN-4024-2-EIPT

Light Control through an EtherNet/IP Network

CCS Inc.
Best Fit for Inspection Systems on EtherNet/IP Networks

Conforms to ODVA Composite Conformance Test Revision CT15.

When you use a PLC ladder editor, you can get and set the operation values for the CN Controller with explicit messages.

You can get the following values through an EtherNet/IP network:

- Accumulated trigger count, accumulated lighting duration, and error status

Additionally, you can set and check the following values:

- Lighting mode, trigger logic, ON/OFF setting for the Light Unit, light intensity, strobe time, and lighting delay
- Accumulated trigger count, accumulated lighting duration, and error status

The CN Controller also provides TCP/IP commands for the same operations.

Note: The CN Controller is operated only through external control, and cannot be controlled manually.

Easy Installation
We will offer an Electronic Data Sheet (EDS) file which describes the communications configuration of the device. Registering the EDS file to a PLC automation system reduces labor and time required for setting up the device.

Easy Operation
When you use a PLC ladder editor, you can get and set the operation values for the CN Controller with explicit messages.

DDL Function
The CN Controller is equipped with the Device Level Ring (DLR) function. Connect two LAN cables to the CN Controller, and if a communications error occurs, the CN Controller will change the communications route immediately. (Refer to the illustration on the right page.)

Operation Data Output
The following values can be obtained for system operation: Accumulated trigger count which counts the number of Light Unit ON operations, accumulated lighting duration which counts the total period that the Light Unit is ON in hours, and error status.
An Electronic Data Sheet (EDS) file will be available at our website. The PLC specifies light control settings for the CN Controller via EtherNet/IP communications.

Three Selectable Lighting Modes

1. **Overdrive Mode**
   (48 VDC output, Strobe time control: 1 to 1,000 μs, Maximum duty ratio: 7%)

   When an external trigger signal is input to the CN Controller, the corresponding Light Unit flashes. By overdriving the voltage that is applied to the Light Unit, you can make the Light Unit flash a few times brighter than when the Light Units operate in any other lighting modes.

   ![Overdrive Mode Diagram](image)

2. **Strobe Mode**
   (24 VDC Output, Strobe time control: 1 to 10,000 μs)

   When an external trigger signal is input to the CN Controller, the corresponding Light Unit flashes. LED Lights can withstand being turned on and off frequently. Turning on the Light Unit only when taking images will reduce heat generation, provide a more stable radiation output, and increase the service life of the Light Unit.

   ![Strobe Mode Diagram](image)

3. **Continuous Mode**
   (24 VDC Output, PWM Control: the light intensity can be set to any of 512 levels.)

   The Light Unit will be ON (or OFF) as long as there is an external trigger signal input to the CN Controller.

   ![Continuous Mode Diagram](image)
### EtherNet/IP Message Specifications

<table>
<thead>
<tr>
<th>Device classification</th>
<th>Message type</th>
<th>Connection type for implicit messaging</th>
<th>Requested packet interval</th>
<th>DLR function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter</td>
<td>Explicit (UCMM, Class 3), Implicit</td>
<td>Exclusive owner, Input only</td>
<td>10 to 3200 ms</td>
<td>Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port number to use (TCP)</th>
<th>Port number to use (UDP)</th>
<th>DHCP</th>
<th>Conformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>44818</td>
<td>2222, 44818</td>
<td>Available (Default: fixed IP address)</td>
<td>ODVA Composite Conformance Test Revision CT15</td>
</tr>
</tbody>
</table>

### Specifications

**Model name**: CN-4024-2-EIPT

**Lighting method**: Overdrive (O/D) Mode, Strobe Mode: Strobe lighting
Continuous Mode: Continuous lighting

**Drive method**: Constant-voltage system

**Intensity control method**: O/D Mode, Strobe Mode: Lighting time control
Continuous Mode: PWM control

**PWM frequency**: 125 kHz

**Number of channels**: 2 channels

**Output ratings (O/D Mode)**:
- 48 VDC
- 5 A max./connector, Total for 2 channels: 7 A max.*1

**Output ratings (Strobe Mode, Continuous Mode)**:
- 24 VDC
- 40 W max./connector, Total for 2 channels: 40 W max.

**External control protocol**: EtherNet/IP, TCP/IP

**Strobe time**: O/D Mode: 1 to 1,000 μs (in steps of 1 μs), Strobe Mode: 1 to 10,000 μs (in steps of 1 μs)

**Lighting delay**: O/D Mode, Strobe Mode: 0 to 10,000 μs (in steps of 1 μs)

**Light intensity**: Continuous Mode: Set any of 512 levels

**Trigger input**: Terminal block, 3 poles, Solid wires or stranded wires AWG 28 to 22
Maximum duty ratio (O/D Mode): 7%

**Trigger input voltage (rating)**: 24 VDC

**Power input**: Terminal block, 3 poles, Solid wires or stranded wires AWG 24 to 16

**Power input voltage (rating)**: 24 VDC

**Power input voltage (range)**: 21.6 to 26.4 VDC

**Average power consumption (typ.)**: 45 W

**Peak power consumption (max.)**: 71.3 W *2

*1 Confirm the peak current of the LED Lights and use them within the above output current. For information on the availability of your LED Lights, refer to our website.

*2 When you select a power supply, the rated output power must be larger than the above peak power consumption.

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**Dimensions (mm)**

**Front view**

**Side view**

**Top view**

**Back view**

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