

# NX-series Digital Output Units

## NX-OD/OC

CSM\_NX-OD\_OC\_DS\_E\_5\_1

### A Wide Range of Digital Output Units from General Purpose use to High-Speed Synchronous Control

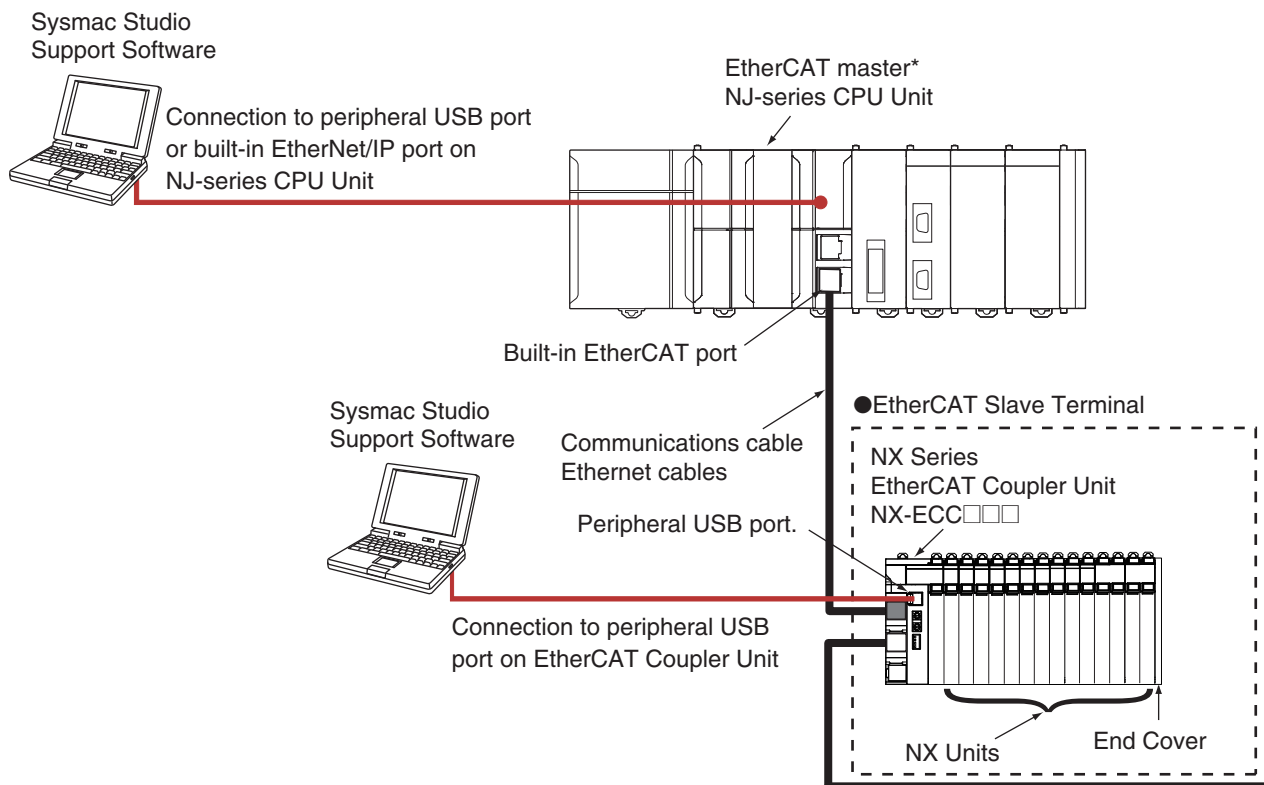
- Transistor and relay Output Units for the NX-series modular I/O system.
- Connect to other NX-series I/O Units and EtherCAT Coupler units using the high-speed NX-bus.
- Synchronous Units update their output status according to the controller's instructions every EtherCAT cycle.



### Features

- High-speed I/O refreshing is possible by connecting with the NX-series EtherCAT Coupler.
- Output refreshing can be synchronized with the control cycle of the Controller. (Synchronous refreshing)
- ON/OFF response time of the high-speed model is 300 ns max, which enables high-speed, high-precision control.
- The screwless terminal block is detachable for easy commissioning and maintenance.
- Screwless clamp terminal block and Connector types are significantly reduces wiring work.
- Up to 16 digital outputs in a space-saving 12 mm width. (Connector Types 30 mm width)
- The lineup includes 2-point, 4-point, 8-point, 16-point, and 32-point types with 3-wire, 2-wire and 1-wire connection methods.
- With output refreshing with specified time stamp, the Output Unit refreshes outputs at the time specified by the program. This enables high-precision output control independent of the control cycle of the Controller.

### System Configuration



\* OMRON CJ1W-NC□81/□82 Position Control Units cannot be connected to the EtherCAT Slave Terminal even though they support EtherCAT.

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## Ordering Information

### International Standards

- The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, CE: EC Directives, and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.

### Transistor Output Unit (Screwless Clamping Terminal Block, 12 mm Width)

| Unit type                      | Product Name  | Specification    |                     |                               |               |  |                          | Model        | Standards         |                          |                          |           |
|--------------------------------|---|------------------|---------------------|-------------------------------|---------------|--|--------------------------|--------------|-------------------|--------------------------|--------------------------|-----------|
|                                |   | Number of points | Internal I/O common | Maximum value of load current | Rated voltage | I/O refreshing method  | ON/OFF response time     |              |                   |                          |                          |           |
| NX Series Digital output Units |  | 2 points         | NPN                 | 0.5 A/point, 1 A/Unit         | 24 VDC        | Output refreshing with specified time stamp only*            | 300 ns max./ 300 ns max. | NX-OD2154    | UC1, N, L, CE, KC |                          |                          |           |
|                                |   |                  | PNP                 |                               |               |  |                          | NX-OD2258    |                   |                          |                          |           |
|                                |   | 4 points         | NPN                 | 0.5 A/point, 2 A/Unit         | 12 to 24 VDC  | Switching Synchronous I/O refreshing and Free-Run refreshing | 300 ns max./ 300 ns max. | NX-OD3121    |                   |                          |                          |           |
|                                |   |                  | PNP                 |                               |               |  |                          | NX-OD3153    |                   |                          |                          |           |
|                                |   |                  | 8 points            |                               | NPN           |  |                          | 12 to 24 VDC |                   | 24 VDC                   | 0.5 ms max./ 1.0 ms max. | NX-OD3256 |
|                                |   |                  |                     |                               | PNP           |  |                          |              |                   |                          | 300 ns max./ 300 ns max. | NX-OD3257 |
|                                |   | 16 points        | NPN                 | 0.5 A/point, 4 A/Unit         | 12 to 24 VDC  | Switching Synchronous I/O refreshing and Free-Run refreshing | 0.1 ms max./ 0.8 ms max. | NX-OD4121    |                   |                          |                          |           |
|                                |   |                  | PNP                 |                               |               |  |                          | 24 VDC       |                   | 0.5 ms max./ 1.0 ms max. | NX-OD4256                |           |
|                                |   |                  | 16 points           |                               | NPN           |  |                          | 12 to 24 VDC |                   | 24 VDC                   | 0.1 ms max./ 0.8 ms max. | NX-OD5121 |
|                                |   |                  |                     |                               | PNP           |  |                          |              |                   |                          |                          | 24 VDC    |

\* To use output refreshing with specified time stamp, NJ CPU Unit with unit version 1.06 or later, EtherCAT Coupler Unit with unit version 1.1 or later, and Sysmac Studio version 1.07 or higher are required.

### Transistor Output Units (MIL Connector, 30 mm Width)

| Unit type                      | Product Name  | Specification    |                     |                                   |               |  |                          | Model       | Standards   |
|--------------------------------|---|------------------|---------------------|-----------------------------------|---------------|--|--------------------------|-------------|-------------|
|                                |   | Number of points | Internal I/O common | Maximum value of load current     | Rated voltage | I/O refreshing method  | ON/OFF response time     |             |             |
| NX Series Digital output Units |  | 16 points        | NPN                 | 0.5 A/point, 2 A/Unit             | 12 to 24 VDC  | Switching Synchronous I/O refreshing and Free-Run refreshing | 0.1 ms max./ 0.8 ms max. | NX-OD5121-5 | UC1, CE, KC |
|                                |   |                  | PNP                 |                                   | 24 VDC        |  | 0.5 ms max./ 1.0 ms max. | NX-OD5256-5 |             |
|                                |   | 32 points        | NPN                 | 0.5 A/point, 2 A/common, 4 A/Unit | 12 to 24 VDC  |  | 0.1 ms max./ 0.8 ms max. | NX-OD6121-5 |             |
|                                |   |                  | PNP                 |                                   | 24 VDC        |  | 0.5 ms max./ 1.0 ms max. | NX-OD6256-5 |             |

### Relay Output Unit (Screwless Clamping Terminal Block, 12 mm Width)

| Unit type                      | Product Name  | Specification |            |  |                       |                      | Model     | Standards         |
|--------------------------------|---|---------------|------------|--|-----------------------|----------------------|-----------|-------------------|
|                                |   | Capacity      | Relay type | Maximum switching capacity   | I/O refreshing method | ON/OFF response time |           |                   |
| NX Series Digital output Units |  | 2 points      | N.O.       | AC250V/2A (cosφ=1)<br>AC250V/2A (cosφ=0.4)<br>DC24V/2A<br>4A/NX Unit | Free-Run refreshing   | 15ms max./ 15ms max. | NX-OC2633 | UC1, N, L, CE, KC |
|                                |   |               | NO+NC      |  |                       |                      | NX-OC2733 | UC1, N, CE, KC    |

## Option

| Product Name                    | Specification  | Model    | Standards |
|---------------------------------|--|----------|-----------|
| Unit/Terminal Block Coding Pins | For 10 Units<br>(Terminal Block: 30 pins, Unit: 30 pins) | NX-AUX02 | ---       |

| Product Name   | Specification    |                             |                      |                           | Model     | Standards |
|----------------|------------------|-----------------------------|----------------------|---------------------------|-----------|-----------|
|                | No. of terminals | Terminal number indications | Ground terminal mark | Terminal current capacity |           |           |
| Terminal Block | 8                | A/B                         | None                 | 10 A                      | NX-TBA082 | ---       |
|                | 12               |                             |                      |                           | NX-TBA122 |           |
|                | 16               |                             |                      |                           | NX-TBA162 |           |

## Accessories

Not included.


## General Specification

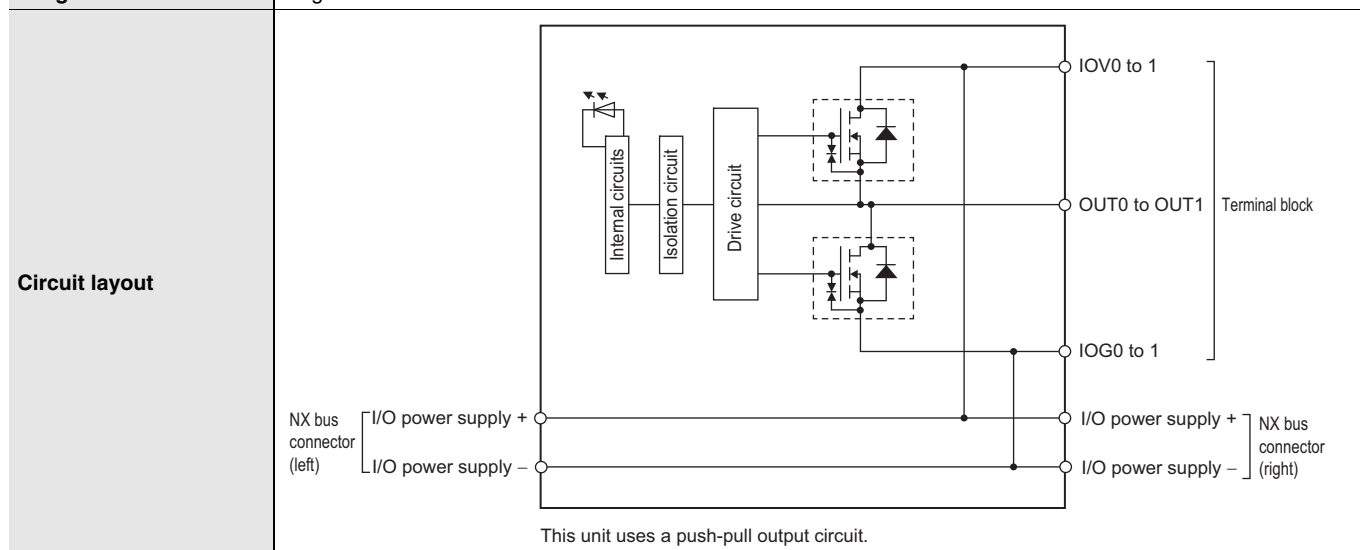
| Item                  | Specification   |   |
|-----------------------|---|---|
| Enclosure             | Mounted in a panel  |   |
| Grounding method      | Ground to 100 Ω or less   |   |
| Operating environment | Ambient operating temperature   | 0 to 55°C   |
|                       | Ambient operating humidity  | 10% to 95% (with no condensation or icing)  |
|                       | Atmosphere  | Must be free from corrosive gases.  |
|                       | Ambient storage temperature   | -25 to 70°C (with no condensation or icing)   |
|                       | Altitude  | 2,000 m max.  |
|                       | Pollution degree  | 2 or less: Conforms to JIS B3502 and IEC 61131-2.   |
|                       | Noise immunity  | 2 kV on power supply line (Conforms to IEC61000-4-4.)   |
|                       | Overvoltage category  | Category II: Conforms to JIS B3502 and IEC 61131-2.   |
|                       | EMC immunity level  | Zone B  |
|                       | Vibration resistance*   | Conforms to IEC 60068-2-6.<br>5 to 8.4 Hz with 3.5-mm amplitude, 8.4 to 150 Hz, acceleration of 9.8 m/s <sup>2</sup> , 100 min each in X, Y, and Z directions<br>(10 sweeps of 10 min each = 100 min total) |
| Shock resistance*     | Conforms to IEC 60068-2-27. 147 m/s <sup>2</sup> , 3 times each in X, Y, and Z directions           |   |
| Applicable standards  | cULus: Listed UL508 and ANSI/ISA 12.12.01<br>EC: EN 61131-2 and C-Tick, KC: KC Registration, NK, LR |   |

\* For the Relay Output Unit, refer to the Digital Input Unit Specifications.

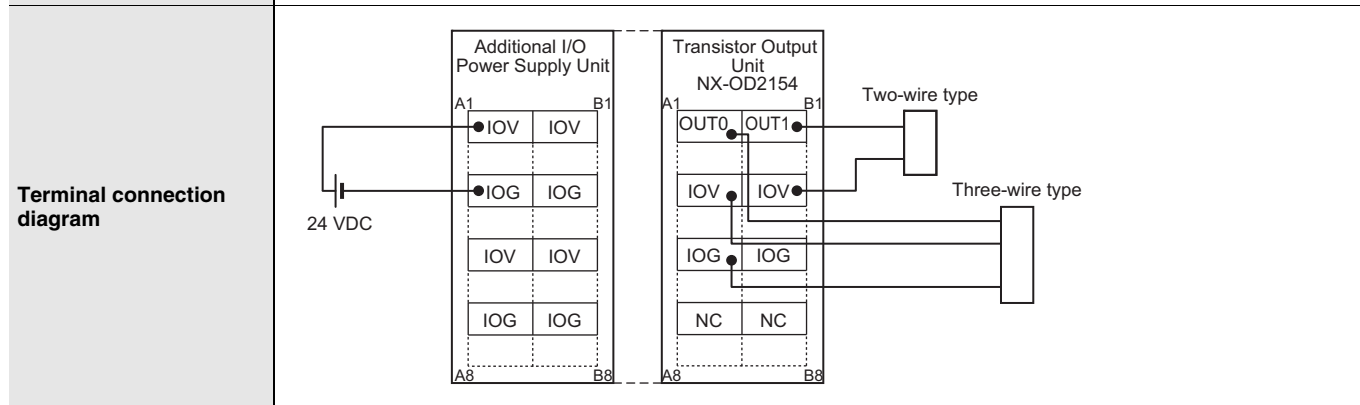
# Digital Output Unit Specifications

## ● Transistor Output Unit (Screwless Clamping Terminal Block 12 mm, Width) NX-OD2154

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD2154  |
| <b>Capacity</b>                  | 2 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (8 terminals)                                  |
| <b>I/O refreshing method</b>     | Output refreshing with specified time stamp   |  |  |
| <b>Indicators</b>                | TS indicator, output indicator<br> | <b>Internal I/O common</b>                           | NPN  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 1 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 300 ns max./300 ns max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Digital isolator isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)   | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max.,<br>IOG: 0.5 A/terminal max.                            |
| <b>NX Unit power consumption</b> | 0.50 W max.   | <b>I/O current consumption</b>                       | 30 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |




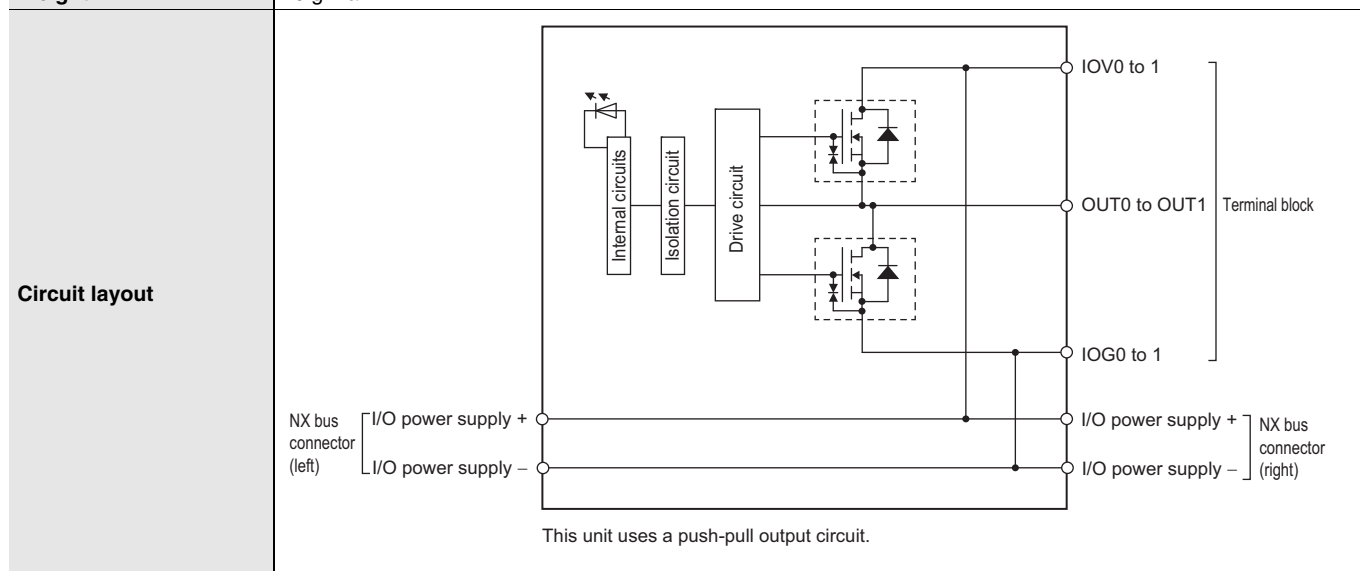
**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



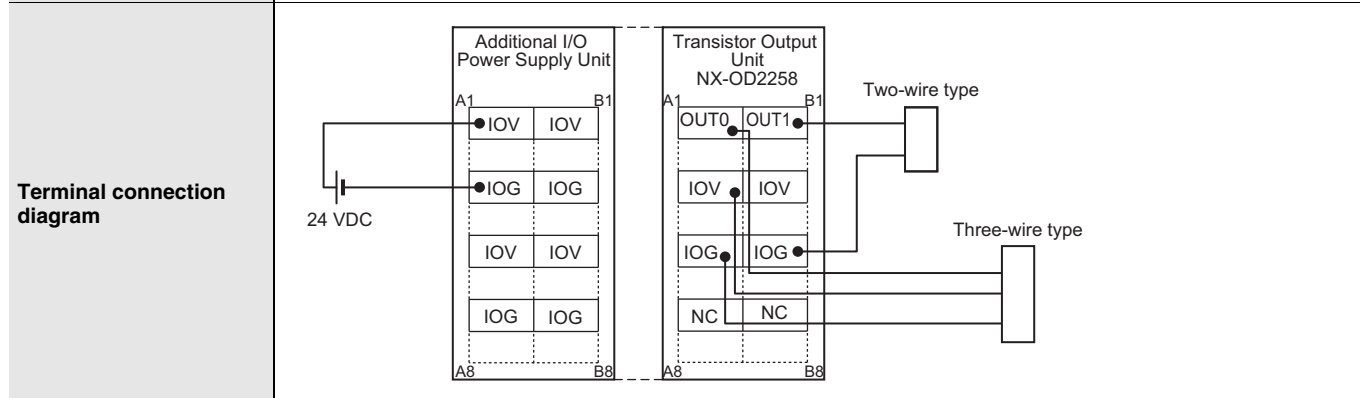
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| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## NX-OD2258

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD2258  |
| <b>Capacity</b>                  | 2 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (8 terminals)                                  |
| <b>I/O refreshing method</b>     | Output refreshing with specified time stamp                                       |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | PNP  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 1 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 300 ns max./300 ns max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Digital isolator isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.                               |
| <b>NX Unit power consumption</b> | 0.50 W max.   | <b>I/O current consumption</b>                       | 40 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |



**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



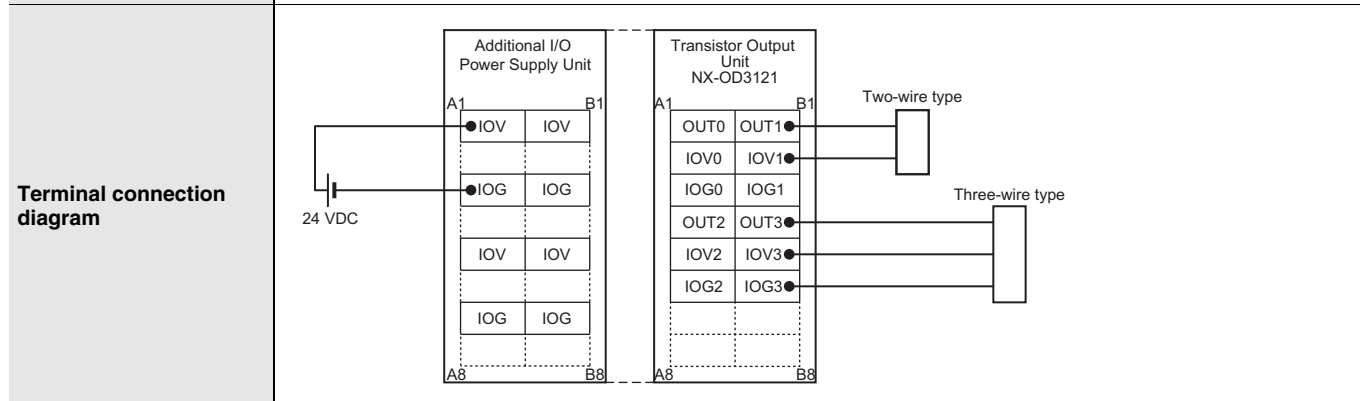
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| <b>Disconnection/ Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|---|----------------|----------------------------|-------------------------------------|

## NX-OD3121

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD3121  |
| <b>Capacity</b>                  | 4 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (12 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing  |  |  |
| <b>Indicators</b>                | TS indicator, output indicator<br> | <b>Internal I/O common</b>                           | NPN  |
|                                  |   | <b>Rated voltage</b>                                 | 12 to 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 10.2 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.1 ms max./0.8 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)   | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.                               |
| <b>NX Unit power consumption</b> | 0.55 W max.   | <b>I/O current consumption</b>                       | 10 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |




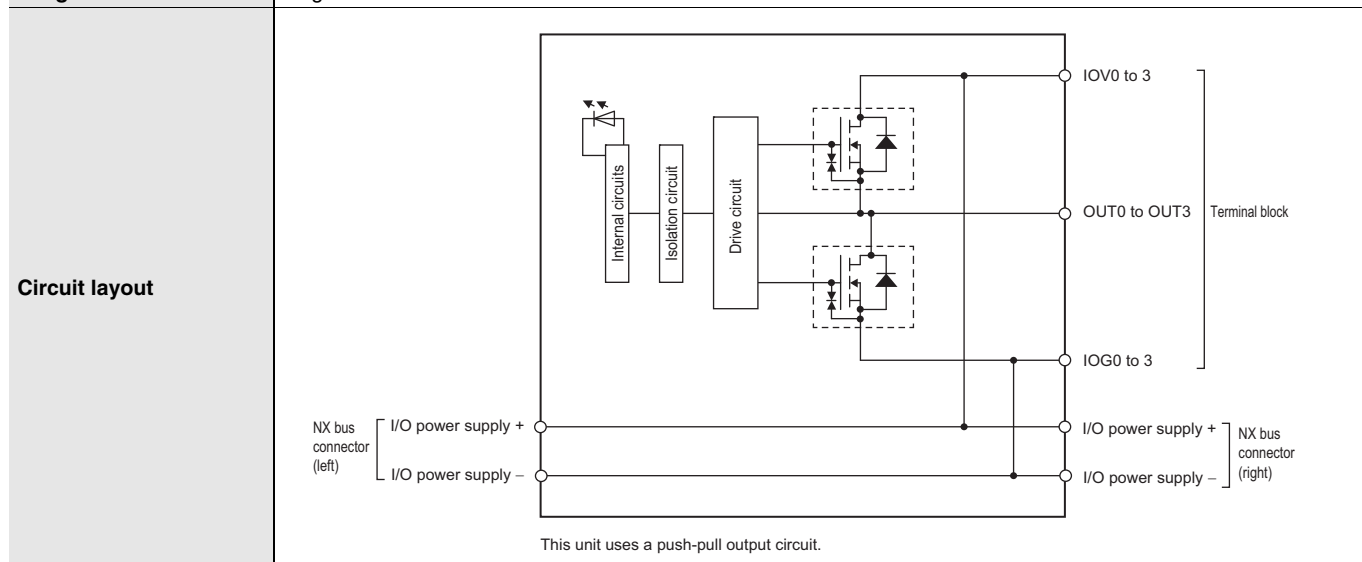
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| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |
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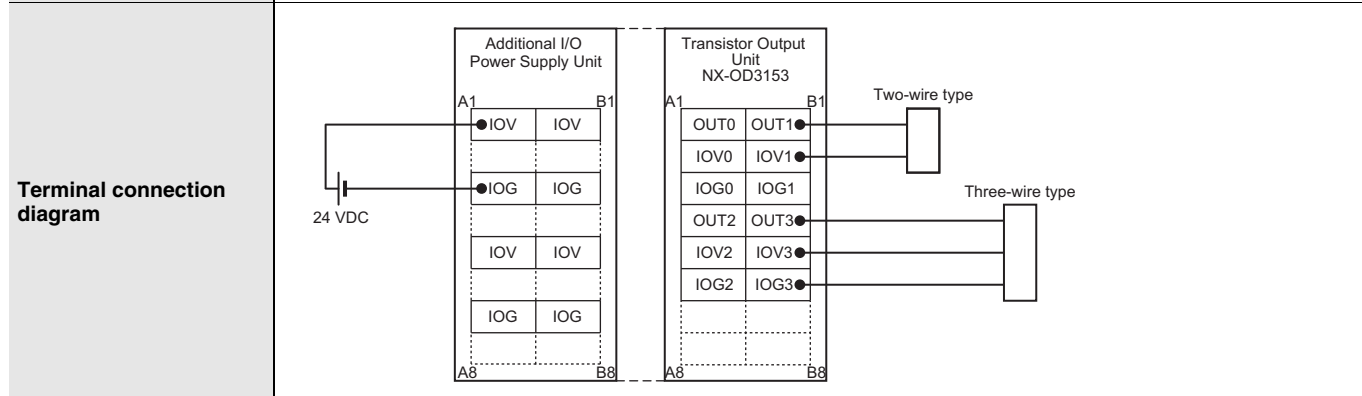
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| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## NX-OD3153

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD3153  |
| <b>Capacity</b>                  | 4 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (12 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | NPN  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 300 ns max./300 ns max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Digital isolator isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max., IOG: 0.5 A/terminal max.                               |
| <b>NX Unit power consumption</b> | 0.50 W max.   | <b>I/O current consumption</b>                       | 30 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |




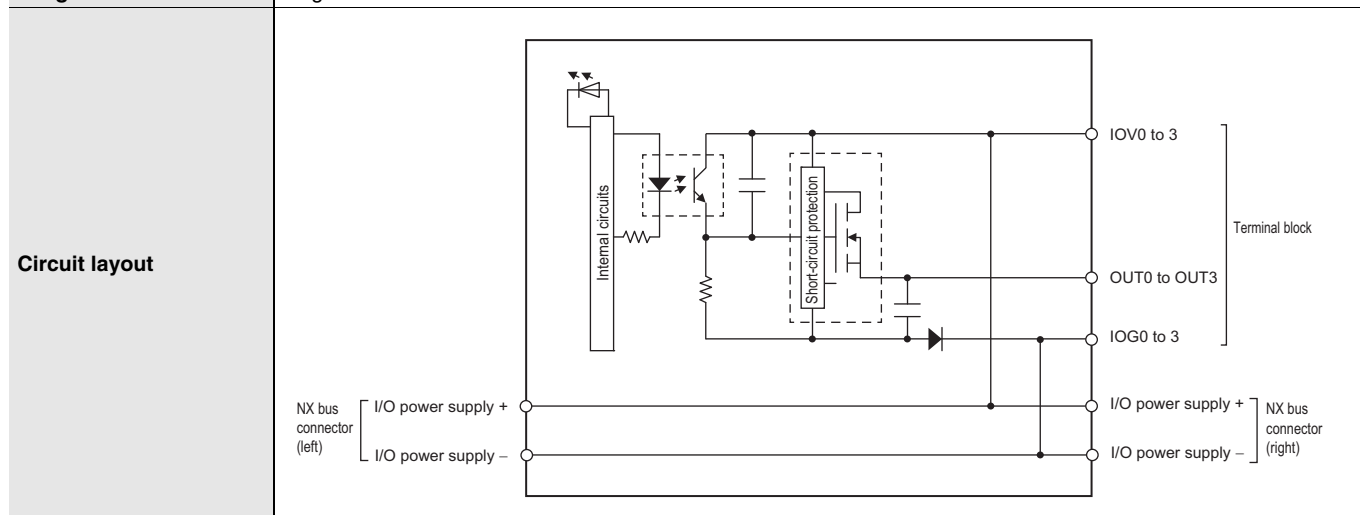
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| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |
|--|--|



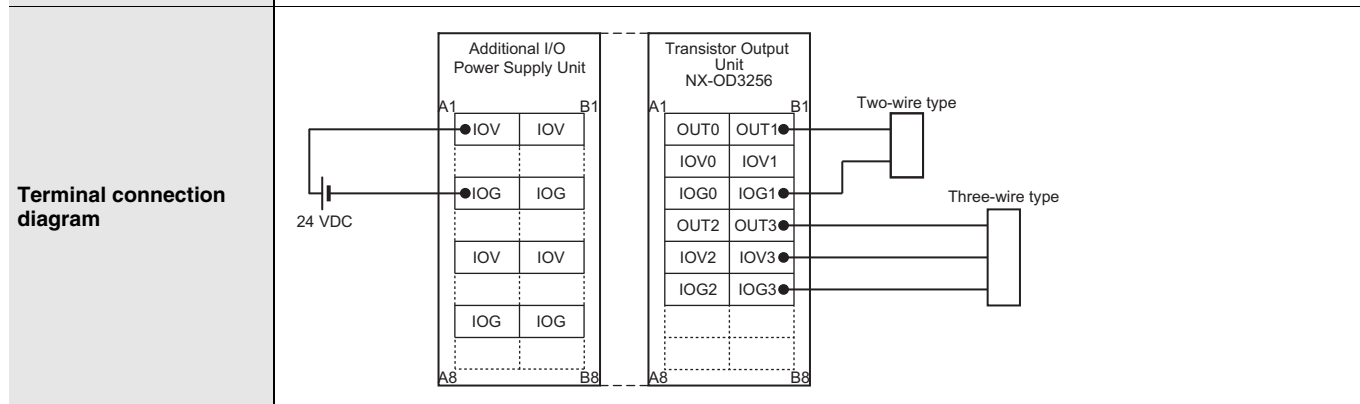
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| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## NX-OD3256

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD3256  |
| <b>Capacity</b>                  | 4 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (12 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | PNP  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.5 ms max./1.0 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max.,<br>IOG: 0.5 A/terminal max.                            |
| <b>NX Unit power consumption</b> | 0.55 W max.   | <b>I/O current consumption</b>                       | 20 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |



**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions

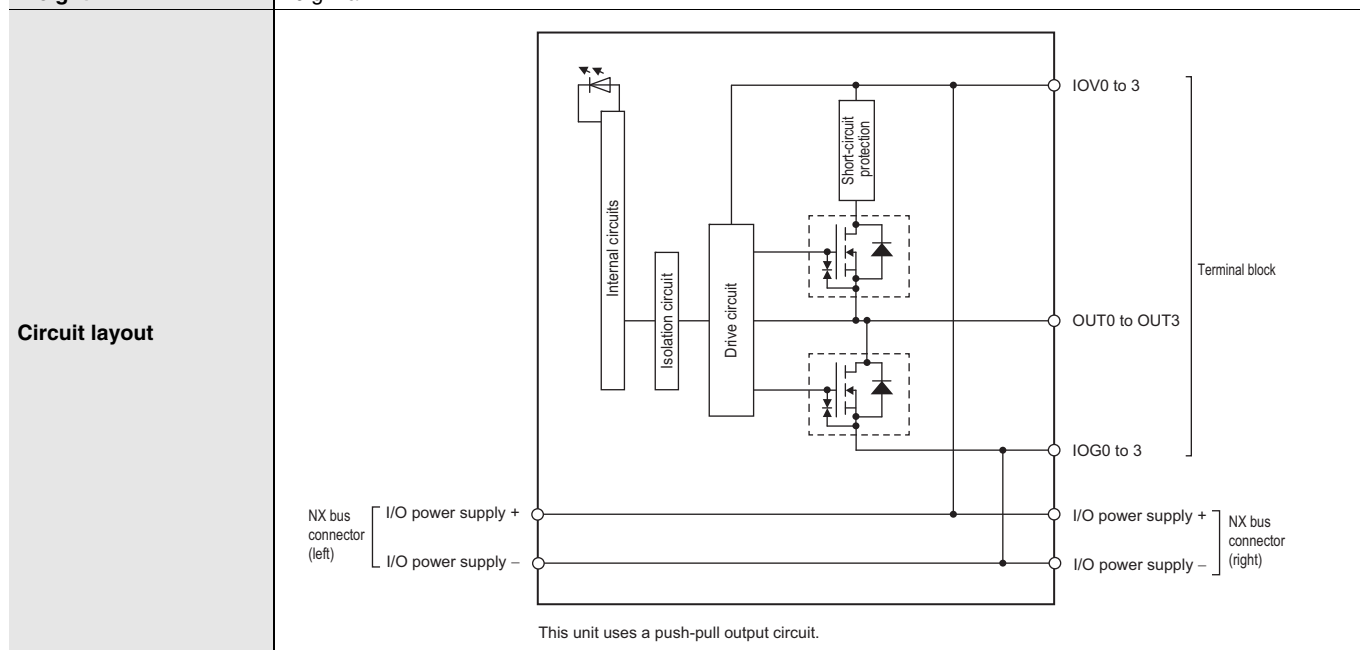


|  |                |                            |                                     |
|--|----------------|----------------------------|-------------------------------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|--|----------------|----------------------------|-------------------------------------|



## NX-OD3257

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD3257  |
| <b>Capacity</b>                  | 4 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (12 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | PNP  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 300 ns max./300 ns max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Digital isolator isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max.,<br>IOG: 0.5 A/terminal max.                            |
| <b>NX Unit power consumption</b> | 0.50 W max.   | <b>I/O current consumption</b>                       | 40 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |

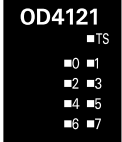


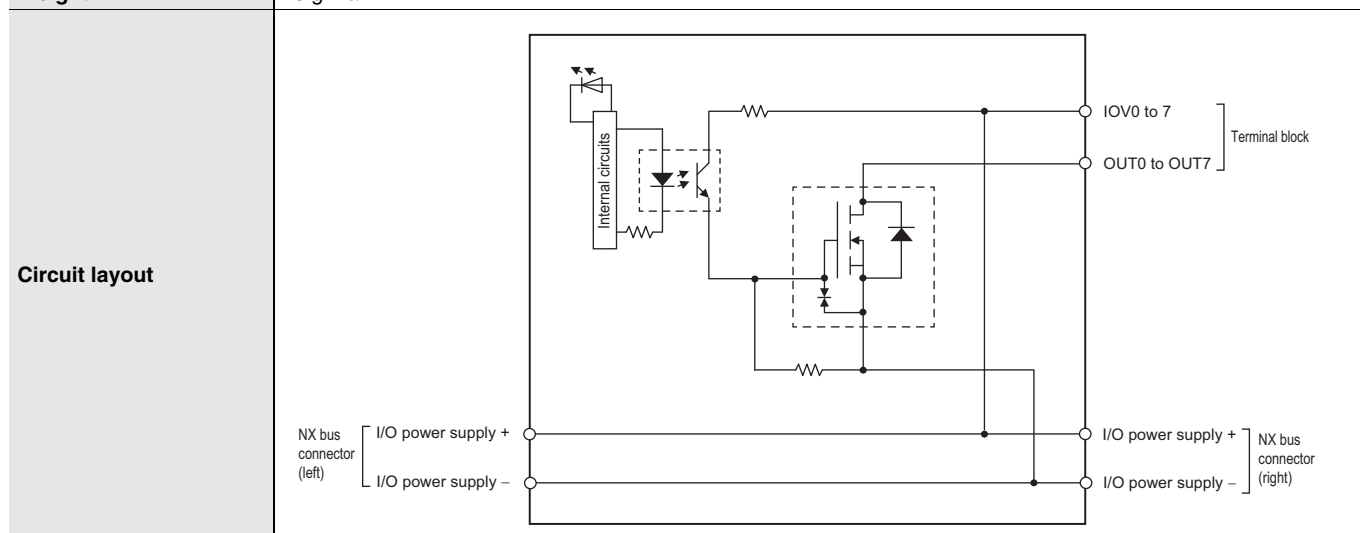
|  |  |  |  |
|--|--|--|--|
| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |  |  |
|--|--|--|--|



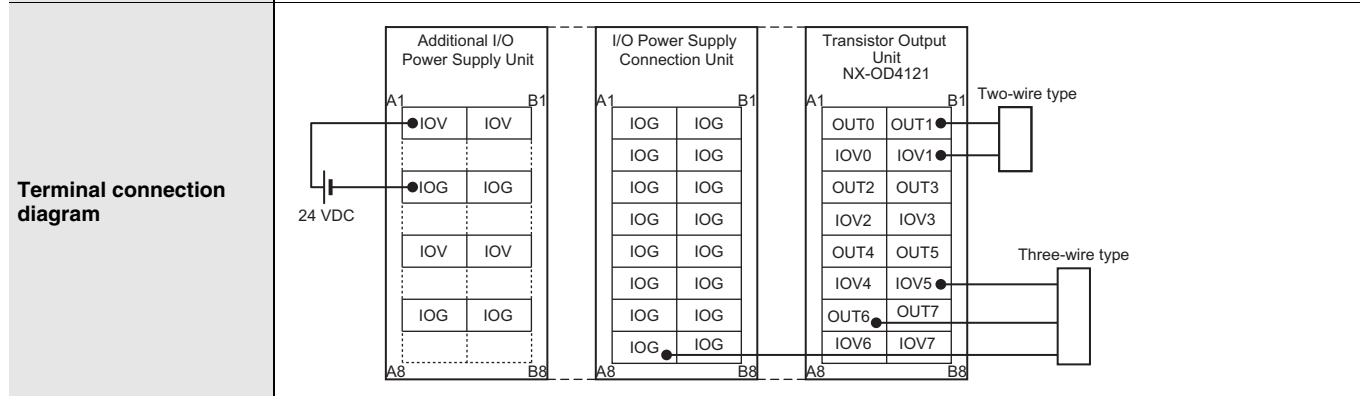
|  |                |                            |                                     |
|--|----------------|----------------------------|-------------------------------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|--|----------------|----------------------------|-------------------------------------|

## NX-OD4121

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD4121  |
| <b>Capacity</b>                  | 8 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (16 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | NPN  |
|                                  |   | <b>Rated voltage</b>                                 | 12 to 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 10.2 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 4 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA   |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.1 ms max./0.8 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOV: 0.5 A/terminal max.   |
| <b>NX Unit power consumption</b> | 0.55 W max.   | <b>I/O current consumption</b>                       | 10 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |



**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



|  |                |                            |                |
|--|----------------|----------------------------|----------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## NX-OD4256

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD4256  |
| <b>Capacity</b>                  | 8 points  | <b>External connection terminals</b>                 | Screwless clamping terminal block (16 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | PNP  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 4 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA   |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.5 ms max./1.0 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | IOG: 0.5 A/terminal max.   |
| <b>NX Unit power consumption</b> | 0.65 W max.   | <b>I/O current consumption</b>                       | 30 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |

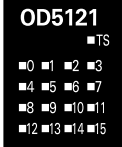


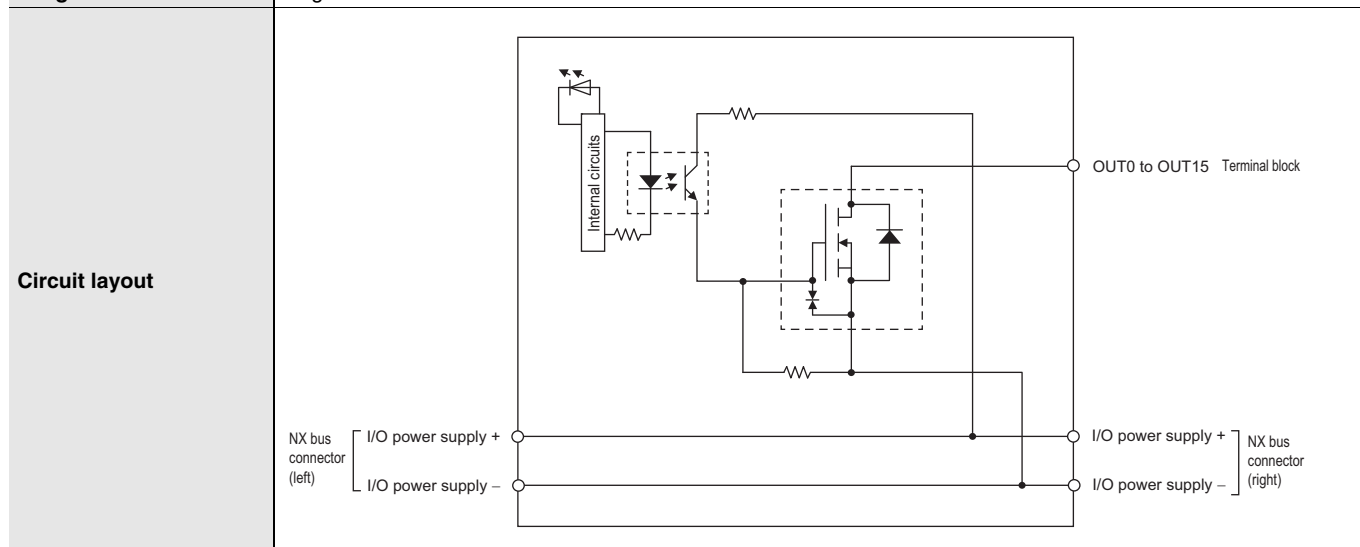
|  |  |
|--|--|
| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |
|--|--|



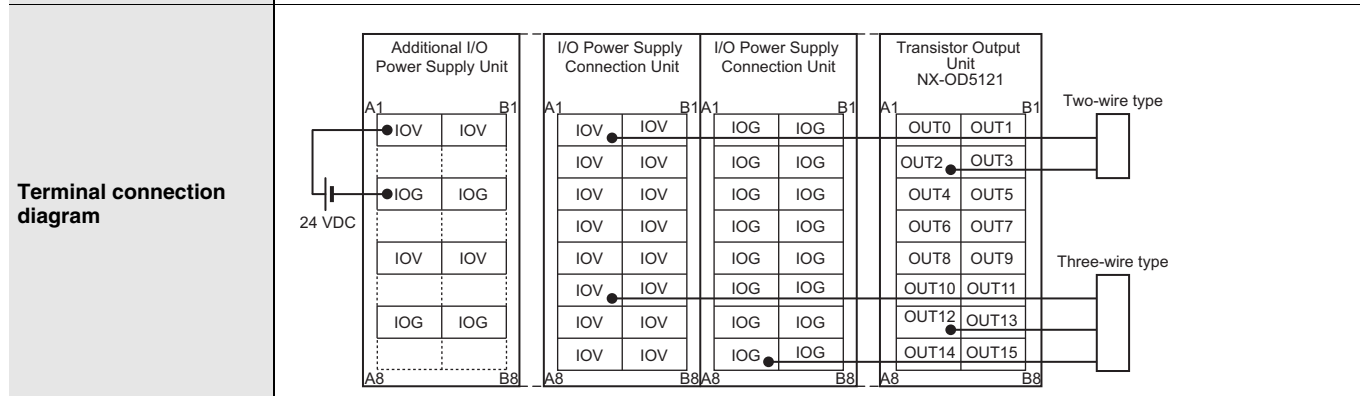
|  |                |                            |                                     |
|--|----------------|----------------------------|-------------------------------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|--|----------------|----------------------------|-------------------------------------|

## NX-OD5121

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD5121  |
| <b>Capacity</b>                  | 16 points   | <b>External connection terminals</b>                 | Screwless clamping terminal block (16 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing  |  |  |
| <b>Indicators</b>                | TS indicator, output indicator<br> | <b>Internal I/O common</b>                           | NPN  |
|                                  |   | <b>Rated voltage</b>                                 | 12 to 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 10.2 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 4 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.1 ms max./0.8 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)   | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 0.65 W max.   | <b>I/O current consumption</b>                       | 20 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |

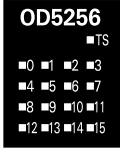


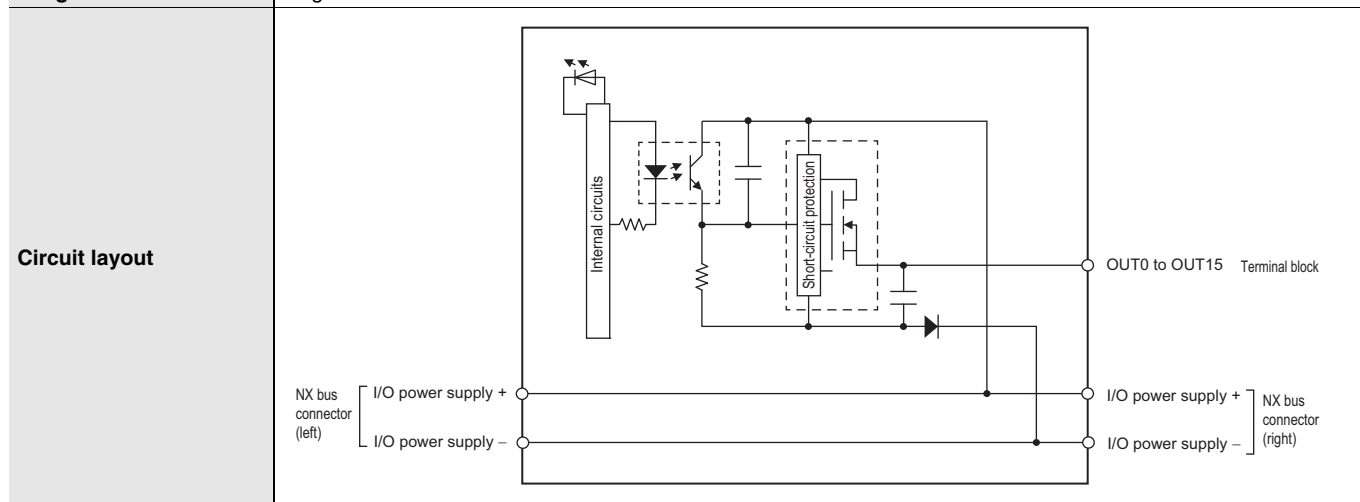
**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



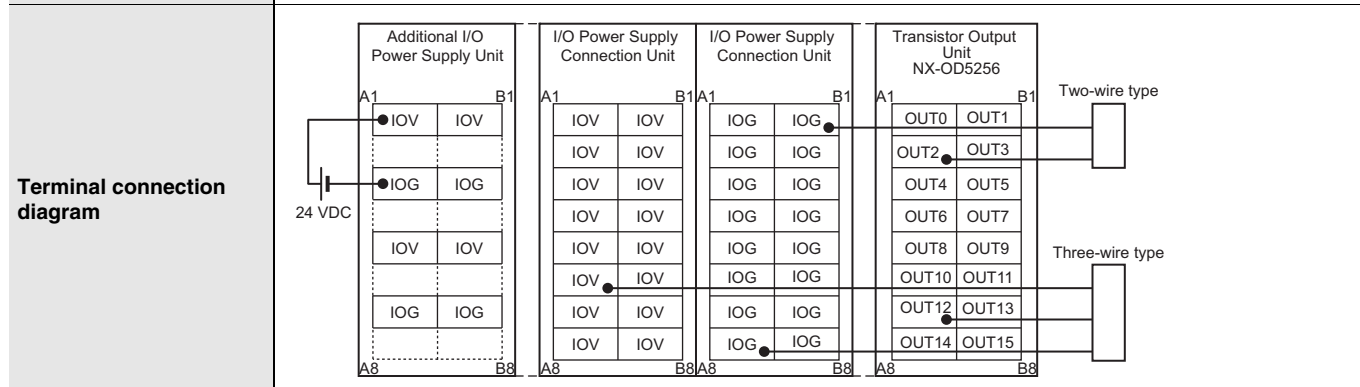
|  |                |                            |                |
|--|----------------|----------------------------|----------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## NX-OD5256

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD5256  |
| <b>Capacity</b>                  | 16 points   | <b>External connection terminals</b>                 | Screwless clamping terminal block (16 terminals)                                 |
| <b>I/O refreshing method</b>     | Selectable Synchronous I/O refreshing or Free-Run refreshing                      |  |  |
| <b>Indicators</b>                |  | <b>Internal I/O common</b>                           | PNP  |
|                                  |   | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 15 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 4 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.5 ms max./1.0 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from the NX bus  | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 0.70 W max.   | <b>I/O current consumption</b>                       | 40 mA max.   |
| <b>Weight</b>                    | 70 g max.   |  |  |

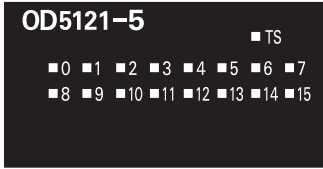


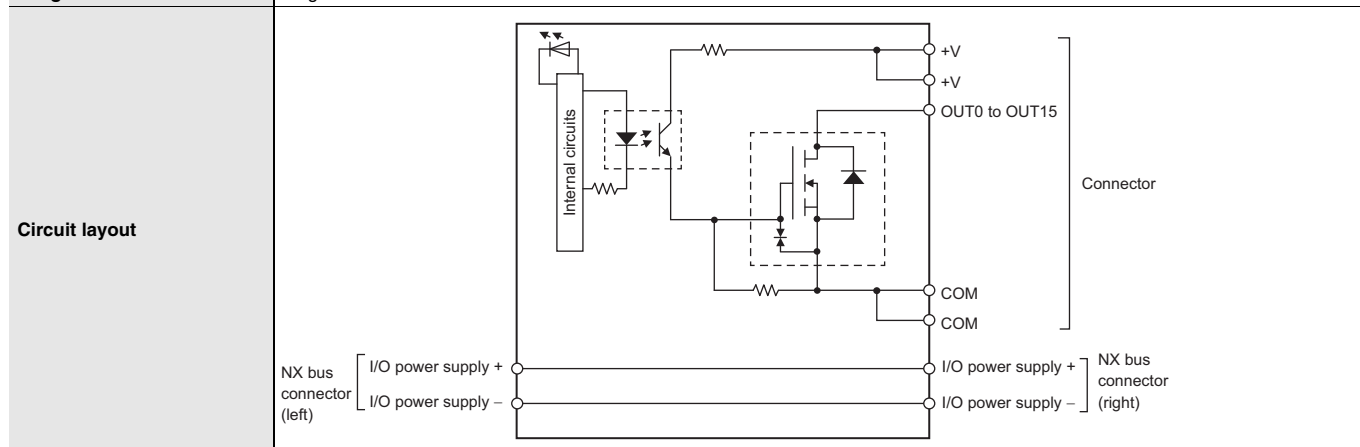
|  |  |  |  |
|--|--|--|--|
| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |  |  |
|--|--|--|--|



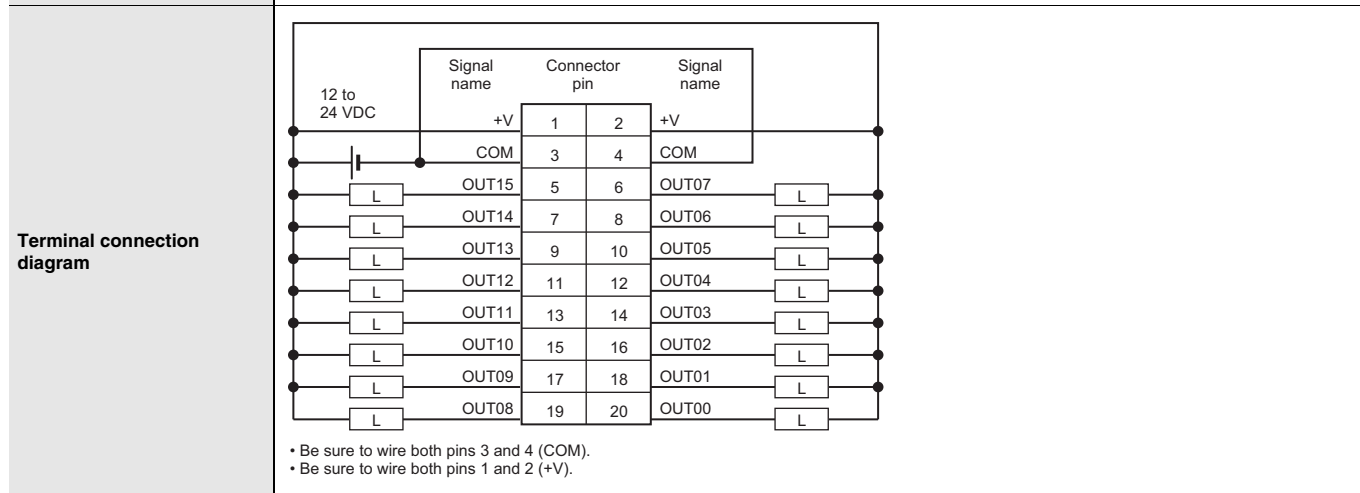
|  |                |                            |                                     |
|--|----------------|----------------------------|-------------------------------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|--|----------------|----------------------------|-------------------------------------|

● Transistor Output Units (MIL Connector, 30 mm Width)  
NX-OD5121-5

|                           |  |   |  |
|---------------------------|--|---|--|
| Unit name                 | Transistor Output Unit   | Model   | NX-OD5121-5  |
| Number of points          | 16 points  | External connection terminals                 | MIL connector (20 terminals)   |
| I/O refreshing method     | Switching Synchronous I/O refreshing and Free-Run refreshing   |   |  |
| Indicators                | TS indicator, output indicator<br><b>OD5121-5</b><br> | Internal I/O common                           | NPN  |
|                           |  | Rated voltage                                 | 12 to 24 VDC   |
|                           |  | Operating load voltage range                  | 10.2 to 28.8 VDC   |
|                           |  | Maximum value of load current                 | 0.5 A/point, 2 A/NX Unit   |
|                           |  | Maximum inrush current                        | 4.0 A/point, 10 ms max.  |
|                           |  | Leakage current                               | 0.1 mA max.  |
|                           |  | Residual voltage                              | 1.5 V max.   |
|                           |  | ON/OFF response time                          | 0.1 ms max./0.8 ms max.  |
| Dimensions                | 30 (W) x 100 (H) x 71 (D)  | Isolation method                              | Photocoupler isolation   |
| Insulation resistance     | 20 MΩ min. between isolated circuits (at 100 VDC)  | Dielectric strength                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| I/O power supply method   | Supply from external source  | Current capacity of I/O power supply terminal | Without I/O power supply terminals   |
| NX Unit power consumption | 0.60 W max.  | Current consumption from I/O power supply     | 30 mA max.   |
| Weight                    | 80 g max.  |   |  |



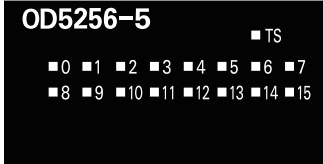
**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions

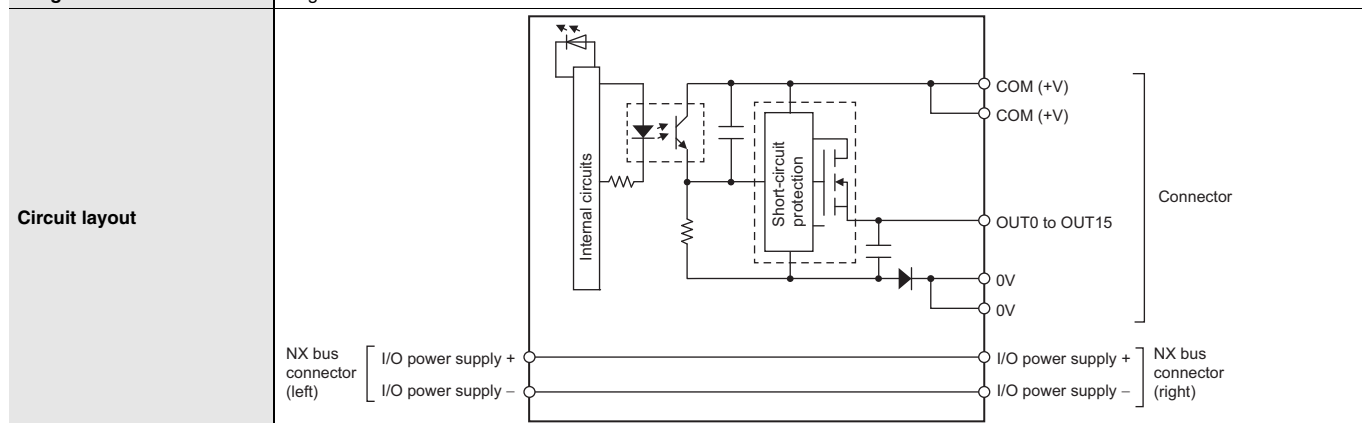


**Disconnection/Short-circuit detection**  
 Not supported.

**Protective function**  
 Not supported.

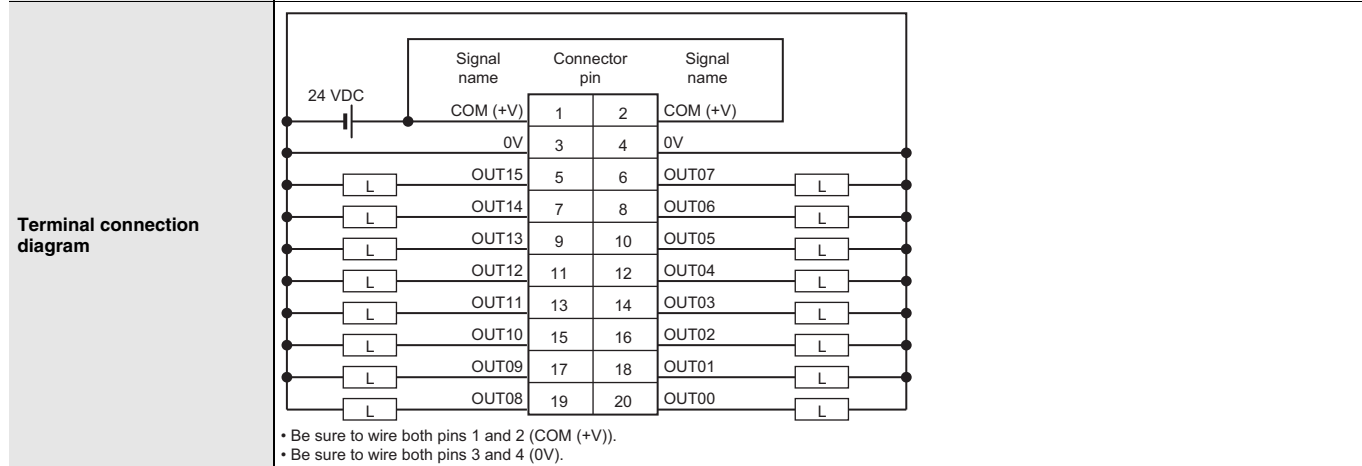
### NX-OD5256-5

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD5256-5  |
| <b>Number of points</b>          | 16 points   | <b>External connection terminals</b>                 | MIL connector (20 terminals)   |
| <b>I/O refreshing method</b>     | Switching Synchronous I/O refreshing and Free-Run refreshing                      |  |  |
| <b>Indicators</b>                | TS indicator, output indicator  | <b>Internal I/O common</b>                           | PNP  |
|                                  |  | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 20.4 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.5 ms max./1.0 ms max.  |
| <b>Dimensions</b>                | 30 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supplied from external source.  | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 0.70 W max.   | <b>Current consumption from I/O power supply</b>     | 40 mA max.   |
| <b>Weight</b>                    | 85 g max.   |  |  |



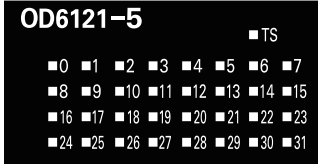
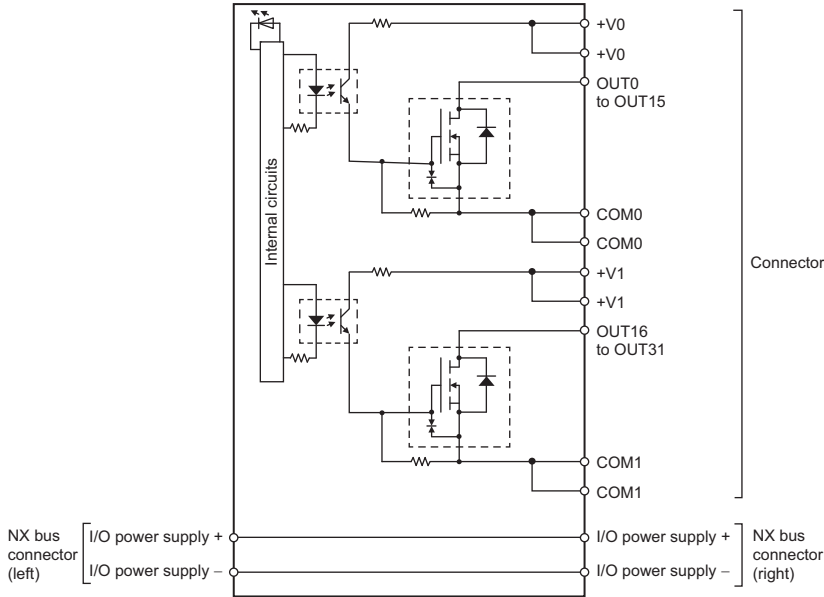
**Installation orientation and restrictions**

Installation orientation: Possible in 6 orientations.  
Restrictions: No restrictions



|  |                |                            |                                     |
|--|----------------|----------------------------|-------------------------------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | With load short-circuit protection. |
|--|----------------|----------------------------|-------------------------------------|

## NX-OD6121-5

|  |  |  |  |
|--|--|--|--|
| <b>Unit name</b>                                 | Transistor Output Unit   | <b>Model</b>   | NX-OD6121-5  |
| <b>Number of points</b>                          | 32 points  | <b>External connection terminals</b>                 | MIL connector (40 terminals)   |
| <b>I/O refreshing method</b>                     | Switching Synchronous I/O refreshing and Free-Run refreshing                           |  |  |
| <b>Indicators</b>                                | TS indicator, output indicator   | <b>Internal I/O common</b>                           | NPN  |
|  |       | <b>Rated voltage</b>                                 | 12 to 24 VDC   |
|  |  | <b>Operating load voltage range</b>                  | 10.2 to 28.8 VDC   |
|  |  | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/common, 4 A/NX Unit   |
|  |  | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|  |  | <b>Leakage current</b>                               | 0.1 mA max.  |
|  |  | <b>Residual voltage</b>                              | 1.5 V max.   |
|  |  | <b>ON/OFF response time</b>                          | 0.1 ms max./0.8 ms max.  |
| <b>Dimensions</b>                                | 30 (W) x 100 (H) x 71 (D)  | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>                     | 20 MΩ min. between isolated circuits (at 100 VDC)                                      | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>                   | Supply from external source  | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b>                 | 0.80 W max.  | <b>Current consumption from I/O power supply</b>     | 50 mA max.   |
| <b>Weight</b>                                    | 90 g max.  |  |  |
| <b>Circuit layout</b>                            |     |  |  |
| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions |  |  |



**Terminal connection diagram**



- Be sure to wire both pins 21 and 22 (+V0).
- Be sure to wire both pins 23 and 24 (COM0).
- Be sure to wire both pins 1 and 2 (+V1).
- Be sure to wire both pins 3 and 4 (COM1).

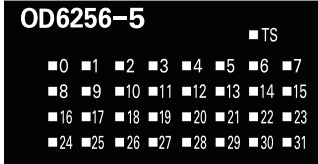
**Disconnection/Short-circuit detection**

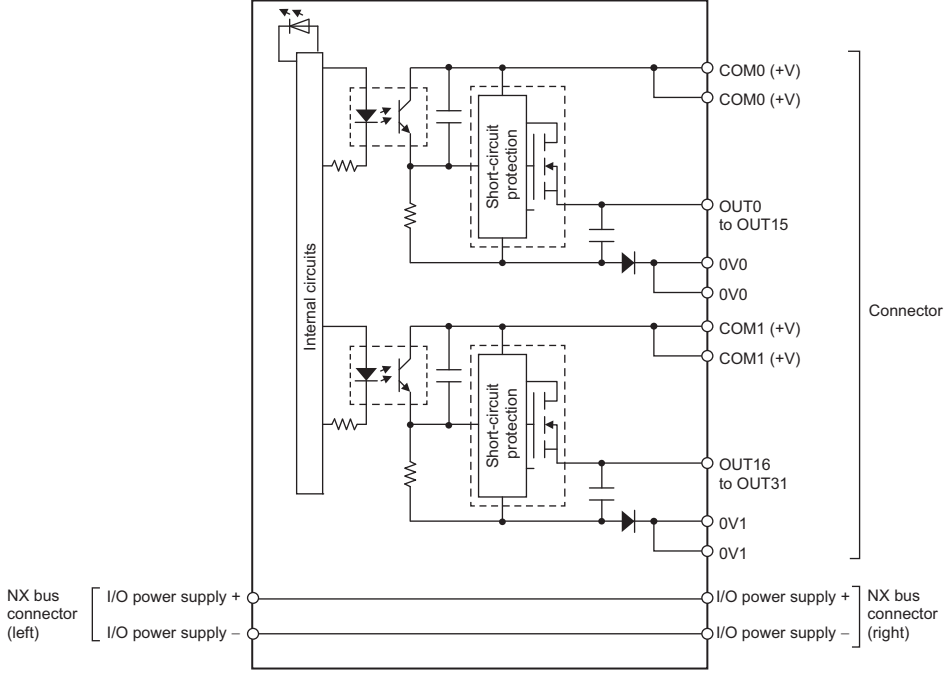
Not supported.

**Protective function**

Not supported.

## NX-OD6256-5

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Transistor Output Unit  | <b>Model</b>   | NX-OD6256-5  |
| <b>Number of points</b>          | 32 points   | <b>External connection terminals</b>                 | MIL connector (40 terminals)   |
| <b>I/O refreshing method</b>     | Switching Synchronous I/O refreshing and Free-Run refreshing                      |  |  |
| <b>Indicators</b>                | TS indicator, output indicator  | <b>Internal I/O common</b>                           | PNP  |
|                                  |  | <b>Rated voltage</b>                                 | 24 VDC   |
|                                  |   | <b>Operating load voltage range</b>                  | 20.4 to 28.8 VDC   |
|                                  |   | <b>Maximum value of load current</b>                 | 0.5 A/point, 2 A/common, 4 A/NX Unit   |
|                                  |   | <b>Maximum inrush current</b>                        | 4.0 A/point, 10 ms max.  |
|                                  |   | <b>Leakage current</b>                               | 0.1 mA max.  |
|                                  |   | <b>Residual voltage</b>                              | 1.5 V max.   |
|                                  |   | <b>ON/OFF response time</b>                          | 0.5 ms max./1.0 ms max.  |
| <b>Dimensions</b>                | 30 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Photocoupler isolation   |
| <b>Insulation resistance</b>     | 20 MΩ min. between isolated circuits (at 100 VDC)                                 | <b>Dielectric strength</b>                           | 510 VAC between isolated circuits for 1 minute at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from external source   | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 1.00 W max.   | <b>Current consumption from I/O power supply</b>     | 80 mA max.   |
| <b>Weight</b>                    | 95 g max.   |  |  |

|  |   |  |  |
|--|---|--|--|
| <b>Circuit layout</b>                            |  <p>The diagram illustrates the internal circuitry of the NX-OD6256-5. It shows two channels of internal circuits, each with a short-circuit protection section. The output terminals are labeled as COM0 (+V), COM0 (+V), OUT0 to OUT15, 0V0, 0V0, COM1 (+V), COM1 (+V), OUT16 to OUT31, 0V1, and 0V1. Power is supplied from an I/O power supply connector (left) and an NX bus connector (right). The power supply lines are labeled as I/O power supply +, I/O power supply -, I/O power supply +, and I/O power supply -.</p> |  |  |
| <b>Installation orientation and restrictions</b> | Installation orientation: Possible in 6 orientations.<br>Restrictions: No restrictions  |  |  |

**Terminal connection diagram**



- Be sure to wire both pins 21 and 22 (COM0 (+V)).
- Be sure to wire both pins 1 and 2 (COM1 (+V)).
- Be sure to wire both pins 23 and 24 (0V0).
- Be sure to wire both pins 3 and 4 (0V1).


**Disconnection/Short-circuit detection**

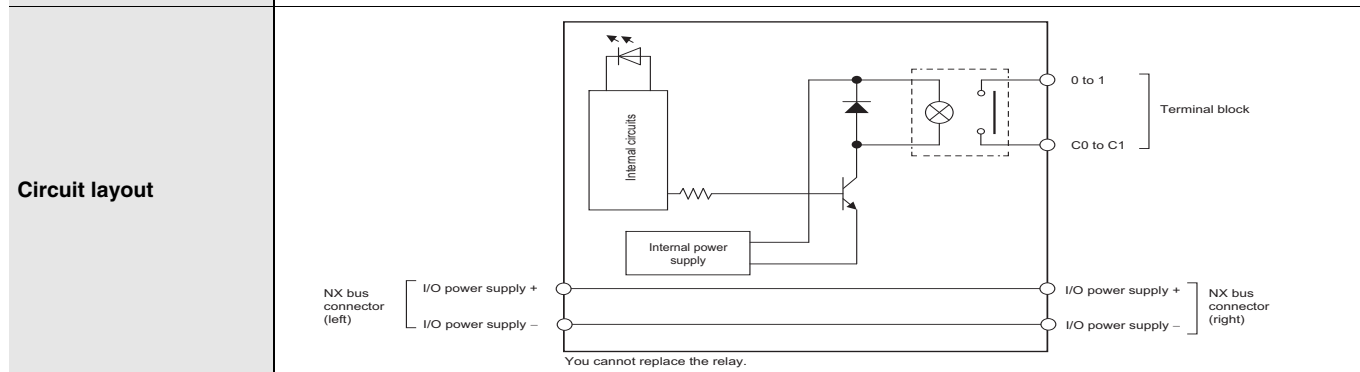
Not supported.

**Protective function**

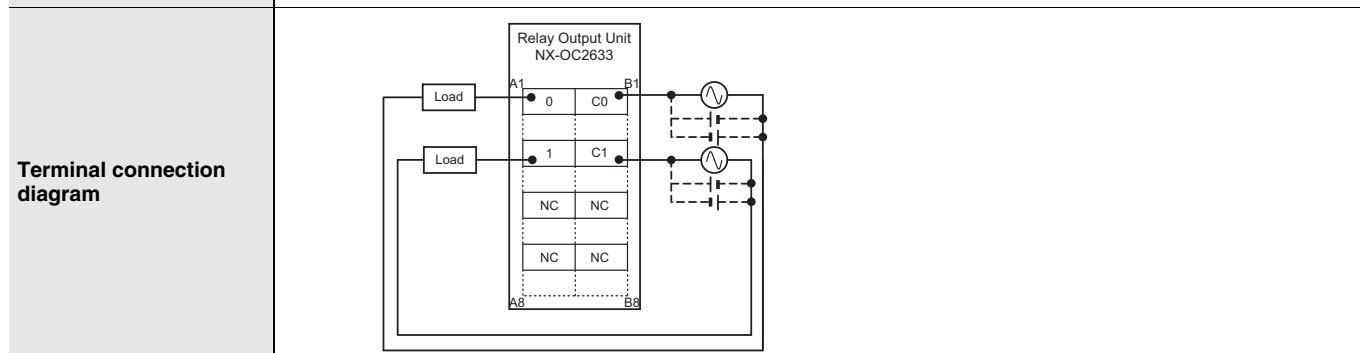
With load short-circuit protection.

## ● Relay Output Unit (Screwless Clamping Terminal Block 12 mm, Width) NX-OC2633

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Relay Output Units  | <b>Model</b>   | NX-OC2633  |
| <b>Capacity</b>                  | 2 points, independent contacts  | <b>External connection terminals</b>                 | Screwless clamping terminal block (8 terminals)  |
| <b>I/O refreshing method</b>     | Free-Run refreshing   |  |  |
| <b>Indicators</b>                |    | <b>Relay type</b>                                    | N.O. contact   |
|                                  |   | <b>Maximum switching capacity</b>                    | 250 VAC/2 A (cosφ = 1),<br>250 VAC/2 A (cosφ = 0.4),<br>24 VDC/2 A, 4 A/Unit   |
|                                  |   | <b>Minimum switching capacity</b>                    | 5 VDC, 1 mA  |
| <b>Relay service life</b>        | Electrical: 100,000 operations*<br>Mechanical: 20,000,000 operations  | <b>ON/OFF response time</b>                          | 15 ms max./15 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Relay isolation  |
| <b>Insulation resistance</b>     | Between A1/B1 terminals and A3/B3 terminals: 20 MΩ min. (500 VDC)<br>Between the external terminals and internal circuits: 20 MΩ min. (500 VDC)<br>Between the internal circuit and GR terminal: 20 MΩ min. (100 VDC)<br>Between the external terminals and GR terminal: 20 MΩ min. (500 VDC) | <b>Dielectric strength</b>                           | Between A1/B1 terminals and A3/B3 terminals: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the external terminals and GR terminal: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the external terminals and internal circuits: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the internal circuit and GR terminal: 510 VAC for 1 min at a leakage current of 5 mA max. |
| <b>Vibration resistance</b>      | Conforms to IEC60068-2-6.<br>5 to 8.4 Hz with amplitude of 3.5 mm, 8.4 to 150 Hz, acceleration of 9.8 m/s <sup>2</sup><br>100 min each in X, Y, and Z directions (10 sweeps of 10 min each = 100 min total)   | <b>Shock resistance</b>                              | 100 m/s <sup>2</sup> , 3 times each in X, Y, and Z directions  |
| <b>I/O power supply method</b>   | Supply from external source   | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 0.80 W max.   | <b>I/O current consumption</b>                       | No consumption   |
| <b>Weight</b>                    | 65 g max.   |  |  |



**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



|  |                |                            |                |
|--|----------------|----------------------------|----------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

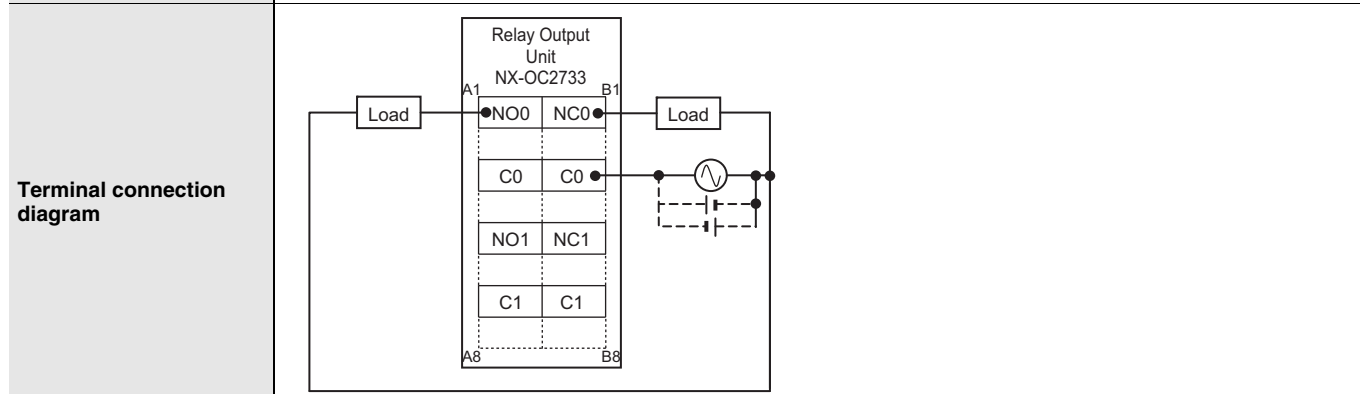
\* Electrical service life will vary depending on the current value. Refer to "NX-series Digital I/O Units User's Manual" for details.

● Relay Output Unit  
NX-OC2733

|                                  |   |  |  |
|----------------------------------|---|--|--|
| <b>Unit name</b>                 | Relay Output Unit   | <b>Model</b>   | NX-OC2733  |
| <b>Number of points</b>          | 2 points, independent contacts  | <b>External connection terminals</b>                 | Screwless clamping terminal block (8 terminals)  |
| <b>Capacity</b>                  | Free-Run refreshing   |  |  |
| <b>Indicators</b>                | TS indicator, output indicator<br>   | <b>Maximum switching capacity</b>                    | 250 VAC/2 A (cosφ = 1),<br>250 VAC/2 A (cosφ = 0.4),<br>24 VDC/2 A,<br>4 A/NX Unit   |
|                                  |   | <b>Minimum switching capacity</b>                    | 5 VDC, 10 mA   |
| <b>Relay service life</b>        | Electrical: 100,000 operations<br>Mechanical: 20,000,000 operations   | <b>ON/OFF response time</b>                          | 15 ms max./15 ms max.  |
| <b>Dimensions</b>                | 12 (W) x 100 (H) x 71 (D)   | <b>Isolation method</b>                              | Relay isolation  |
| <b>Insulation resistance</b>     | Between A1/3, B1/3 terminals and A5/7, B5/7 terminals: 20 MΩ min. (at 500 VDC)<br>Between the external terminals and functional ground terminal: 20 MΩ min. (at 500 VDC)<br>Between the external terminals and internal circuits: 20 MΩ min. (at 500 VDC)<br>Between the internal circuit and the functional ground terminal: 20 MΩ min. (at 100 VDC) | <b>Dielectric strength</b>                           | Between A1/3, B1/3 terminals and A5/7, B5/7 terminals: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the external terminals and the functional ground terminal: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the external terminals and internal circuits: 2300 VAC for 1 min at a leakage current of 5 mA max.<br>Between the internal circuit and the functional ground terminal: 510 VAC for 1 min at a leakage current of 5 mA max. |
| <b>I/O power supply method</b>   | Supply from external source   | <b>Current capacity of I/O power supply terminal</b> | Without I/O power supply terminals   |
| <b>NX Unit power consumption</b> | 0.95 W max.   | <b>Current consumption from I/O power supply</b>     | No consumption   |
| <b>Weight</b>                    | 70 g max.   |  |  |



**Installation orientation and restrictions**  
 Installation orientation: Possible in 6 orientations.  
 Restrictions: No restrictions



|  |                |                            |                |
|--|----------------|----------------------------|----------------|
| <b>Disconnection/Short-circuit detection</b> | Not supported. | <b>Protective function</b> | Not supported. |
|--|----------------|----------------------------|----------------|

## Version Information

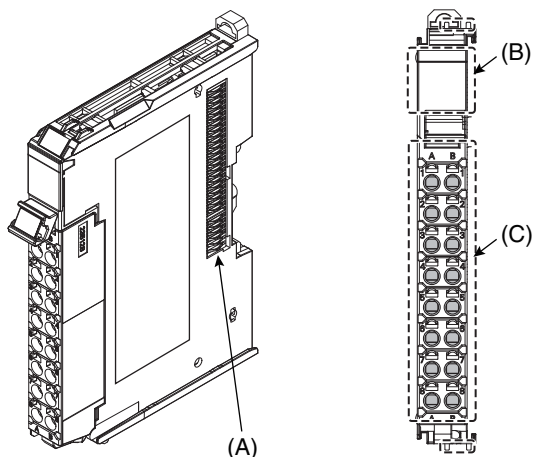
| NX Units    |              | Corresponding unit versions/versions        |  |                    |
|-------------|--------------|---|--|--------------------|
| Model       | Unit Version | EtherCAT Coupler Units<br>NX-ECC201/ECC202* | NJ-series CPU Units<br>NJ501-□□□□/NJ301-□□□□ | Sysmac Studio      |
| NX-OD2154   | Ver.1.0      | Ver.1.1 or later                            | Ver.1.06 or later                            | Ver.1.07 or higher |
| NX-OD2158   |              |   |  |                    |
| NX-OD3121   |              | Ver.1.0 or later                            | Ver.1.05 or later                            | Ver.1.06 or higher |
| NX-OD3153   |              |   |  |                    |
| NX-OD3256   |              |   |  |                    |
| NX-OD3257   |              |   |  |                    |
| NX-OD4121   |              |   |  |                    |
| NX-OD4256   |              |   |  |                    |
| NX-OD5121   |              |   |  |                    |
| NX-OD5121-5 |              |   |  |                    |
| NX-OD5256   |              |   |  |                    |
| NX-OD5256-5 |              |   |  |                    |
| NX-OD6121-5 |              |   |  |                    |
| NX-OD6256-5 |              |   |  |                    |
| NX-OC2633   |              | Ver.1.06 or higher                          |  |                    |
| NX-OC2733   |              |   | Ver.1.08 or higher                           |                    |

\* For the NX-ECC202, there is no unit version of 1.1 or earlier.

## External Interface

### Screwless Clamping Terminal Block Type

● 12mm Width



| Symbol | Name             | Function   |
|--------|------------------|--|
| (A)    | NX bus connector | This connector is used to connect each Unit.   |
| (B)    | Indicators       | The indicators show the current operating status of the Unit.  |
| (C)    | Terminal block   | The terminal block is used to connect external devices. The number of terminals depends on the type of Unit. |

#### Terminal Blocks



| Symbol | Name                        | Function  |
|--------|-----------------------------|---|
| (A)    | Terminal number indications | Terminal numbers for which A to D indicate the column, and 1 to 8 indicate the line are displayed. The terminal number is a combination of column and line, so A1 to A8 and B1 to B8 are displayed. The terminal number indications are the same regardless of the number of terminals on the terminal block. |
| (B)    | Release holes               | Insert a flat-blade screwdriver into these holes to connect and remove the wires.   |
| (C)    | Terminal holes              | The wires are inserted into these holes.  |

### Applicable Terminal Blocks for Each Unit Model

| Unit model | Terminal Blocks |                  |                             |                      |                           |
|------------|-----------------|------------------|-----------------------------|----------------------|---------------------------|
|            | Model           | No. of terminals | Terminal number indications | Ground terminal mark | Terminal current capacity |
| NX-OD2□□□  | NX-TBA082       | 8                | A/B                         | None                 | 10 A                      |
| NX-OD3□□□  | NX-TBA122       | 12               | A/B                         | None                 | 10 A                      |
| NX-OD4□□□  | NX-TBA162       | 16               | A/B                         | None                 | 10 A                      |
| NX-OD5□□□  | NX-TBA162       | 16               | A/B                         | None                 | 10 A                      |
| NX-OC2□□□  | NX-TBA082       | 8                | A/B                         | None                 | 10 A                      |

### Applicable Wires

#### Using Ferrules

If you use ferrules, attach the twisted wires to them.

Observe the application instructions for your ferrules for the wire stripping length when attaching ferrules.

Always use one-pin ferrules. Do not use two-pin ferrules.

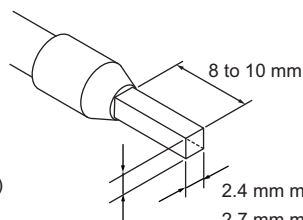
The applicable ferrules, wires, and crimping tool are given in the following table.

| Terminal types                        | Manufacturer    | Ferrule model number | Applicable wire (mm <sup>2</sup> (AWG)) | Crimping tool  |  |
|---------------------------------------|-----------------|----------------------|---|--|--|
| Terminals other than ground terminals | Phoenix Contact | AI0,34-8             | 0.34 (#22)                              | Phoenix Contact (The figure in parentheses is the applicable wire size.)<br>CRIMPFOX 6 (0.25 to 6 mm <sup>2</sup> , AWG24 to 10) |  |
|                                       |                 | AI0,5-8              | 0.5 (#20)                               |  |  |
|                                       |                 | AI0,5-10             |   |  |  |
|                                       |                 | AI0,75-8             | 0.75 (#18)                              |  |  |
|                                       |                 | AI0,75-10            |   |  |  |
|                                       |                 | AI1,0-8              | 1.0 (#18)                               |  |  |
|                                       |                 | AI1,0-10             |   |  |  |
|                                       |                 | AI1,5-8              | 1.5 (#16)                               |  |  |
| AI1,5-10                              |                 |                      |   |  |  |
| Ground terminals                      |                 | AI2,5-10             | 2.0 *                                   |  |  |
| Terminals other than ground terminals | Weidmuller      | H0.14/12             | 0.14 (#26)                              |  | Weidmuller (The figure in parentheses is the applicable wire size.)<br>PZ6 Roto (0.14 to 6 mm <sup>2</sup> , AWG 26 to 10) |
|                                       |                 | H0.25/12             | 0.25 (#24)                              |  |  |
|                                       |                 | H0.34/12             | 0.34 (#22)                              |  |  |
|                                       |                 | H0.5/14              | 0.5 (#20)                               |  |  |
|                                       |                 | H0.5/16              |   |  |  |
|                                       |                 | H0.75/14             | 0.75 (#18)                              |  |  |
|                                       |                 | H0.75/16             |   |  |  |
|                                       |                 | H1.0/14              | 1.0 (#18)                               |  |  |
|                                       |                 | H1.0/16              |   |  |  |
|                                       |                 | H1.5/14              | 1.5 (#16)                               |  |  |
|                                       |                 | H1.5/16              |   |  |  |

\* Some AWG 14 wires exceed 2.0 mm<sup>2</sup> and cannot be used in the screwless clamping terminal block.

When you use any ferrules other than those in the above table, crimp them to the twisted wires so that the following processed dimensions are achieved.

Finished Dimensions of Ferrules



1.6 mm max. (except ground terminals)

2.0 mm max. (ground terminals)

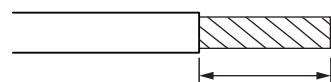
2.4 mm max. (except ground terminals)

2.7 mm max. (ground terminals)

#### Using Twisted Wires/Solid Wires

If you use the twisted wires or the solid wires, the applicable wire range and conductor length (stripping length) are as follows.

| Terminal types                        | Applicable wires                           | Conductor length (stripping length) |
|---------------------------------------|--|-------------------------------------|
| Ground terminals                      | 2.0 mm <sup>2</sup>                        | 9 to 10 mm                          |
| Terminals other than ground terminals | 0.08 to 1.5 mm <sup>2</sup><br>AWG28 to 16 | 8 to 10 mm                          |



Conductor length (stripping length)



## Units with MIL Connectors

### ● 1 Connector with 20 Terminals



| Letter | Name             | Function  |
|--------|------------------|---|
| (A)    | NX bus connector | This connector is used to connect each Unit.                  |
| (B)    | Indicators       | The indicators show the current operating status of the Unit. |
| (C)    | Connectors       | The connectors are used to connect to external devices.       |

### ● 1 Connector with 40 Terminals

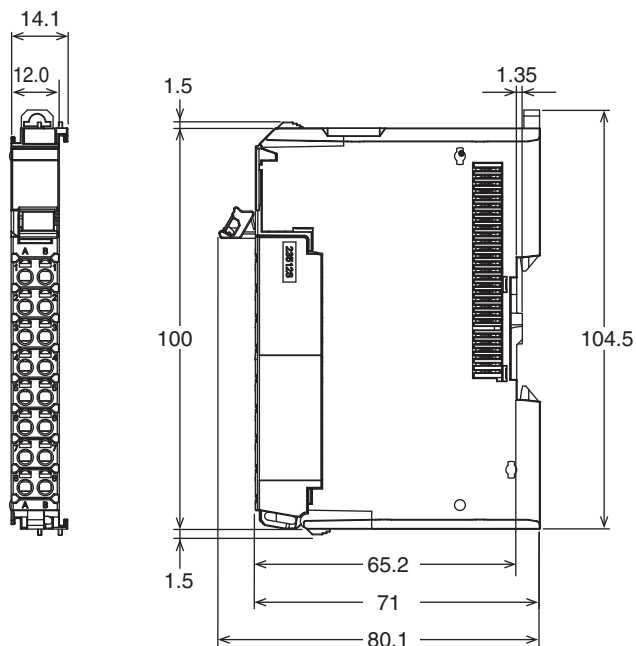


| Letter | Name             | Function  |
|--------|------------------|---|
| (A)    | NX bus connector | This connector is used to connect each Unit.                  |
| (B)    | Indicators       | The indicators show the current operating status of the Unit. |
| (C)    | Connectors       | The connectors are used to connect to external devices.       |

## Dimensions

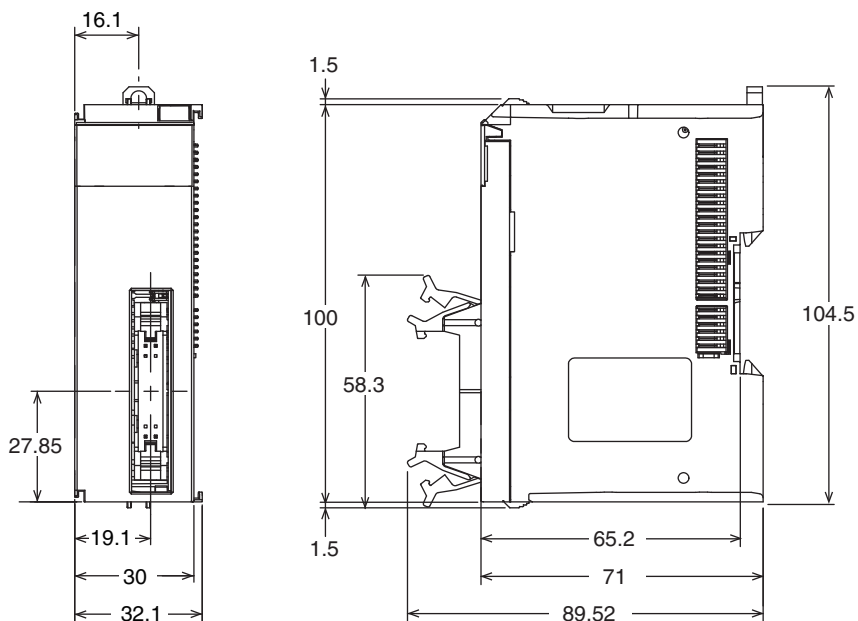
### Screwless Clamping Terminal Block Type

- 12 mm Width



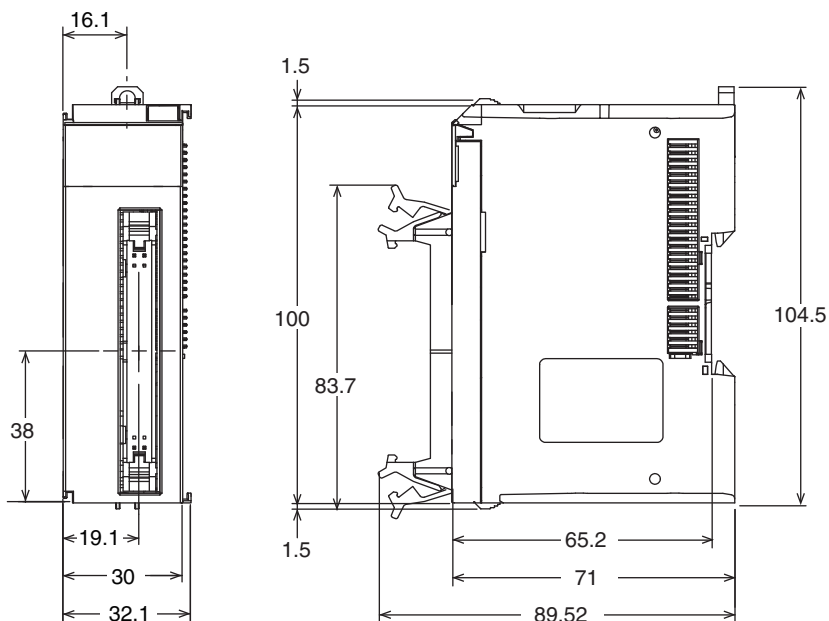
### Units with MIL Connectors (1 Connector with 20 terminals)

- 30 mm Width



**Units with MIL Connectors (1 Connector with 40 terminals)**

● 30 mm Width



**Related Manuals**

| Cat. No. | Model number  | Manual name                               | Application                                     | Description  |
|----------|---|---|---|--|
| W521     | NX-IA□□□□<br>NX-ID□□□□<br>NX-OD□□□□<br>NX-OC□□□□<br>NX-MD□□□□ | NX-series Digital I/O Units User's Manual | Learning how to use NX-series Digital I/O Units | The hardware, setup methods, and functions of the NX-series Digital I/O Units are described. |

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