

CONPROSYS nano Series
Digital Input Module
CPSN-DI-08L
Digital Input Module Built-in power supply
CPSN-DI-08BL



* Specifications, color and design of the products are subject to change without notice.

Features

Opto-coupler isolated input (supporting current sink output)
CPSN-DI-08L has the opto-coupler isolated input 8 channels (supporting current sink/source output) whose response speed is 200μsec or less.

CPSN-DI-08BL has the opto-coupler isolated input 8 channels (supporting current sink output) whose response speed is 200μsec or less.

All of the input signals are usable as interrupt events.
You can use all of the input signals as interrupt events and also disable or enable the interrupt in bit units and select the interrupt edge.

Equipped with an input pulse filter function to prevent false recognition of input signals due to noise and chattering

This product is equipped with an input pulse filter that can prevent input signal noise and chattering. The input pulse filter can be applied to all input terminals, and configuration can be performed using the software.

Easy installation and removal
This product can be installed in and removed from the CPU unit or USB I/O Unit - Module Type without any tools.

Adaptable to a wide range of temperature between -20 and +60°C
The product is capable of operating in the temperature between -20 and + 60°C. It can be installed in the various environments.

Equipped with the LED for an operation check
The product has the LED for an operation check, which helps you visually confirm the communication status of each interface.

No electrolytic capacitor
Without an electrolytic capacitor, which has a limited life, we are creating the product with a longer life.

Packing List

Product [CPSN-DI-08L, CPSN-DI-08BL] ...1
10-pin power connector..1
Please read the following ...1

This product is an expansion I/O module that adds an opto-coupler isolated input interface with a response speed of 200 μs or less to the CPU unit or USB I/O Unit - Module Type of the CONPROSYS nano series.

The CPSN-DI-08L is equipped with 8 inputs and 1 common that support current sink/source output. This product can also be used with an external circuit power supply of 12 to 24 V.

The CPSN-DI-08BL is equipped with 8 inputs and 1 common that support current sink output. This product's internal circuit also has a built-in power supply, so no external circuit power supply is necessary.

- * The contents in this document are subject to change without notice.
- * Visit the CONTEC website to check the latest details in the document.
- * The information in the data sheets is as of October 2025.

Specifications

Function specifications

| Item | CPSN-DI-08L | CPSN-DI-08BL |
|--|---|--|
| Input | | |
| Input type | Opto-coupler isolated input (supports current sink [negative logic] output*1/current source [positive logic] output*2) | Opto-coupler isolated input (supports current sink [negative logic] output *1) |
| Isolation | Opto-coupler Isolation | |
| Voltage Resistance | AC1000Vrms | AC500Vrms |
| Input Resistance | 4.7kΩ | |
| Input ON current | 2.0mA or more | |
| Input OFF current | 0.16mA or less | |
| Interrupt | 8 interrupt input signals are arranged into a single output of interrupt signal. An interrupt is generated at the rising edge (HIGH-to-LOW transition) or falling edge (LOW-to-HIGH transition). (setting can be done by software) | |
| Response time | Within 200μsec | |
| Number of input signal channels | 8 (shared common) | |
| LED | D10 - D17 (Green) | |
| Common | | |
| Connector | 2 pieces 3.81mm pitch 10-pin terminal | |
| Applicable | AWG28 - 16 | |
| External circuit power supply | 12 - 24VDC (±10%) | - |
| Internal circuit power supply | - | 12VDC 32mA (Max.) |
| Electricity consumption | - | 5V 0.11A (Max.) 3.3V 0.05A (Max.) |
| Allowable distance of signal extension | Approx. 50m (depending on wiring environment) | |
| Physical dimensions (mm) | 15.6 (W) x 52.6(D) x 84(H) (not include projection) | |
| Weight | 50g | |

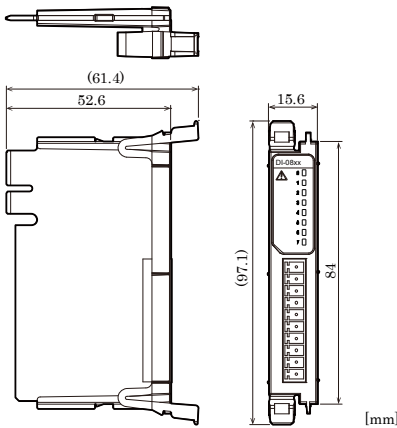
*1 Data "0" and "1" correspond to the High and Low levels, respectively.
*2 Data "0" and "1" correspond to the Low and High levels, respectively.

Installation Environment Requirements

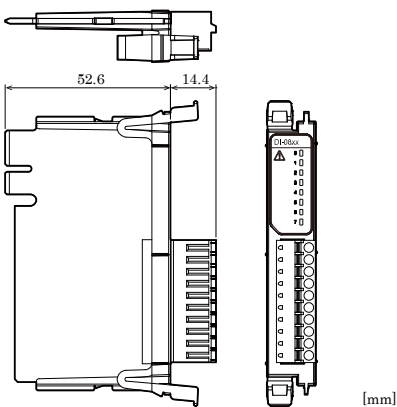
| Item | Description | |
|-----------------------------------|--|--|
| Operating ambient temperature | -20 - +60°C (Vertical installation) -20°C to +55°C with a vertical installation at an angle of 90° to the left/right or with a horizontal installation. | |
| Operating ambient humidity | 10 - 90%RH (No condensation) | |
| Non-operating ambient temperature | -20 - +60°C | |
| Non-operating ambient humidity | 10 - 90%RH (No condensation) | |
| Floating dust particles | Not to be excessive | |
| Corrosive gases | None | |
| Line-noise resistance | Line noise | Signal Line /±1kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3) |
| | Static electricity | Touch /±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) |
| | resistance | Air /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3) |
| Vibration resistance | Sweep | 10 - 57Hz *1/ semi-amplitude vibration 0.15mm, 57 - 150Hz/2.0G |
| | resistance | 40 minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant) |
| Impact resistance | 15G half-sine shock for 11ms in X, Y, and Z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant) | |
| Standard | VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, ISED, KC | |

*1 With the optional DIN rail fitting power supply : 10-55Hz (for details, see the specification of the optional power supply)

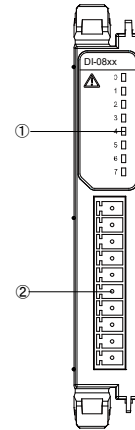
Physical Dimensions



With the connector attached



Name of each parts



- (1) LED Indicator : Displays the digital input status.
- (2) Interface Connector : This is a connector for digital input. Use the 10-pin connector, included in this package.

Isolation Digital Input Connector

This product has 8 channels of digital input. Use the 10-pin connector, included in this package.

- Mounted Connector
10-pin European style terminal block (3.81mm pitch, 10 x 1 row)
MC 1.5/10-G-3,81 P26 THR [Phoenix Contact] or equivalent
- Compatible Connector
10-pin European style terminal block (3.81mm pitch, 10 x 1 row)
FK-MCP 1.5/10-ST-3,81 [Phoenix Contact] or equivalent

CPSN-DI-08L

| Pin No. | Signal Name | Meaning |
|---------|-------------|---|
| 1 | COM | When connecting to sink output, connect this pin to the positive side of the external circuit power supply. When connecting to source output, connect this pin to the negative side of the external circuit power supply. There is one common for DI0 to DI7. |
| 2 | N.C. | This pin is not connected. |
| 3 - 10 | DI0 - DI7 | This indicates the input signals. It connects the output signals from the other devices. |

List of Options

| Product Name | Model type | Description |
|-------------------------------|--------------------|--|
| CPU unit | CPSN-MCB271-S1-041 | Remote I/O CPU unit *1 |
| | CPSN-MCB271-1-041 | Remote I/O CPU unit LAN 2-channel model *1 |
| | CPSN-PCB271-S1-041 | CODESYS Modbus Master CPU unit |
| USB I/O Unit - Module Type | CC-USB271-CPSN4 | USB I/O Unit - Module Type (4 slot) *1 |
| DIN rail fitting power supply | CPS-PWD-30AW24-01 | Fitting power supply 30W (Input: 100 - 240VAC, Output: 24VDC 1.3 A) |
| | CPS-PWD-90AW24-01 | Fitting power supply 90W (Input: 100 - 240VAC, Output: 24VDC 3.8 A) |

*1 Available with our device driver API-TOOL.

* Visit the Contec website regarding information on the optional products

CPSN-DI-08BL

| Pin No. | Signal Name | Meaning |
|---------|-------------|---|
| 1 | PCOM | This pin outputs the positive side of the internal power supply. It can be used in operations such as lighting LEDs on other devices. |
| 2 | MCOM | This connects the negative-side of the external power. It shares with 8 channels of input signal (DI0 - DI7). |
| 3 | DI0 - DI7 | This indicates the input signals. It connects the output signals from the other devices. |

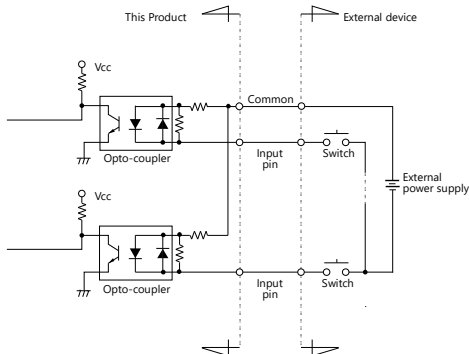
Digital Input (DI)

For the CPSN-DI-08L, opto-coupler-isolated input (supporting current sink/source output) is used for the digital input. For the CPSN-DI-08BL, opto-coupler-isolated input (supporting current sink output) is used for the digital input.

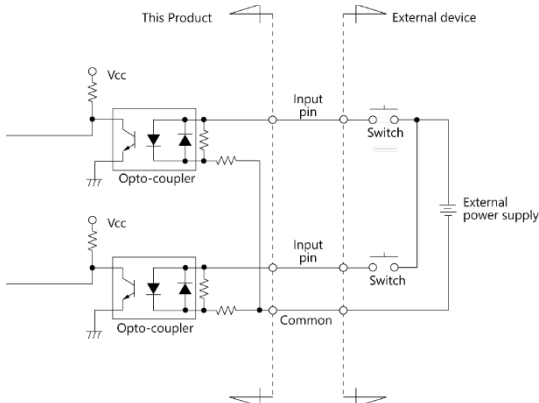
The digital input is connected to a device that can perform current driving such as a switch or transistor output device. The ON/OFF state of the device is input as a digital value.

The input equivalent circuit of the digital input and the connection with the external device vary depending on the I/O module and the current output direction, so see the following figure.

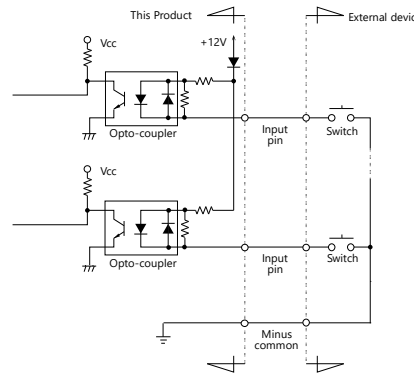
Digital input circuit (Corresponded to current sink output) < CPSN-DI-08L >



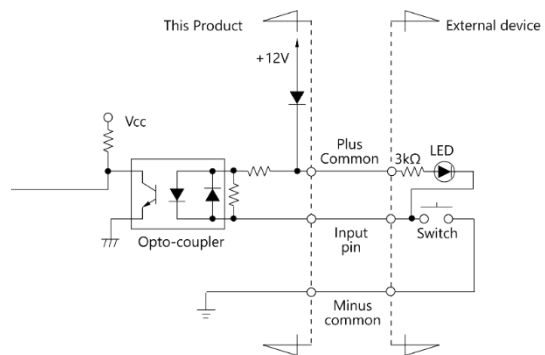
Digital input circuit (Corresponded to current source output) < CPSN-DI-08L >



Digital input circuit (Corresponded to current sink output) < CPSN-DI-08BL >

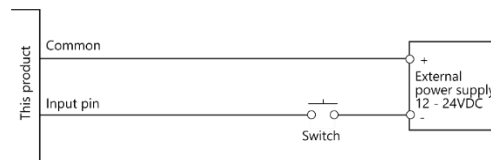


Digital input circuit < CPSN-DI-08BL > (Corresponded to current sink output) (When using the product with an operation such as lighting an LED for checking the internal circuit power supply)



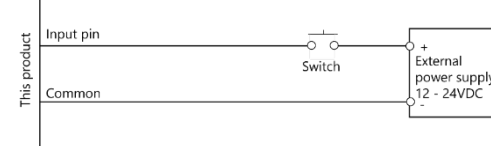
Example of connecting the product to a switch

Example connection to the switch (Corresponded to current sink output) < CPSN-DI-08L >



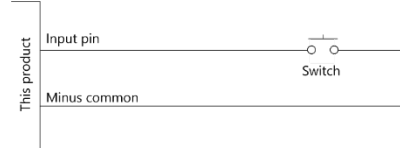
When the switch is "ON", the relevant bit indicates "1".
When the switch is "OFF", the relevant bit indicates "0".

Example connection to the switch (Corresponded to current source output) < CPSN-DI-08L >



When the switch is "ON", the relevant bit indicates "1".
When the switch is "OFF", the relevant bit indicates "0".

Connection to the switch (Corresponded to current sink output) < CPSN-DI-08BL >

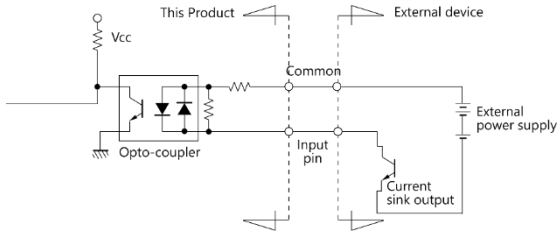


When the switch is "ON", the relevant bit indicates "1".
When the switch is "OFF", the relevant bit indicates "0".

Example of Connecting the Product to a Transistor

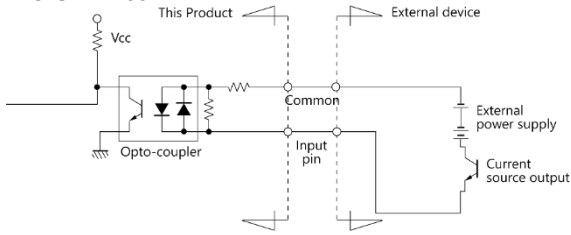
Connection to the transistor (Corresponded to current sink output)

< CPSN-DI-08L >



Connection to the transistor (Corresponded to current source output)

< CPSN-DI-08L >



Connection to the transistor (Corresponded to current sink output)

< CPSN-DI-08BL >

